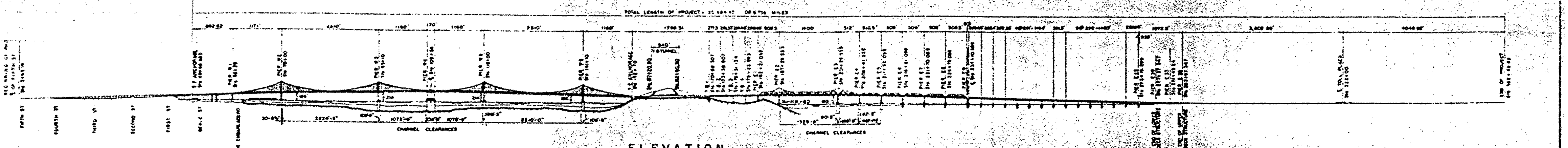
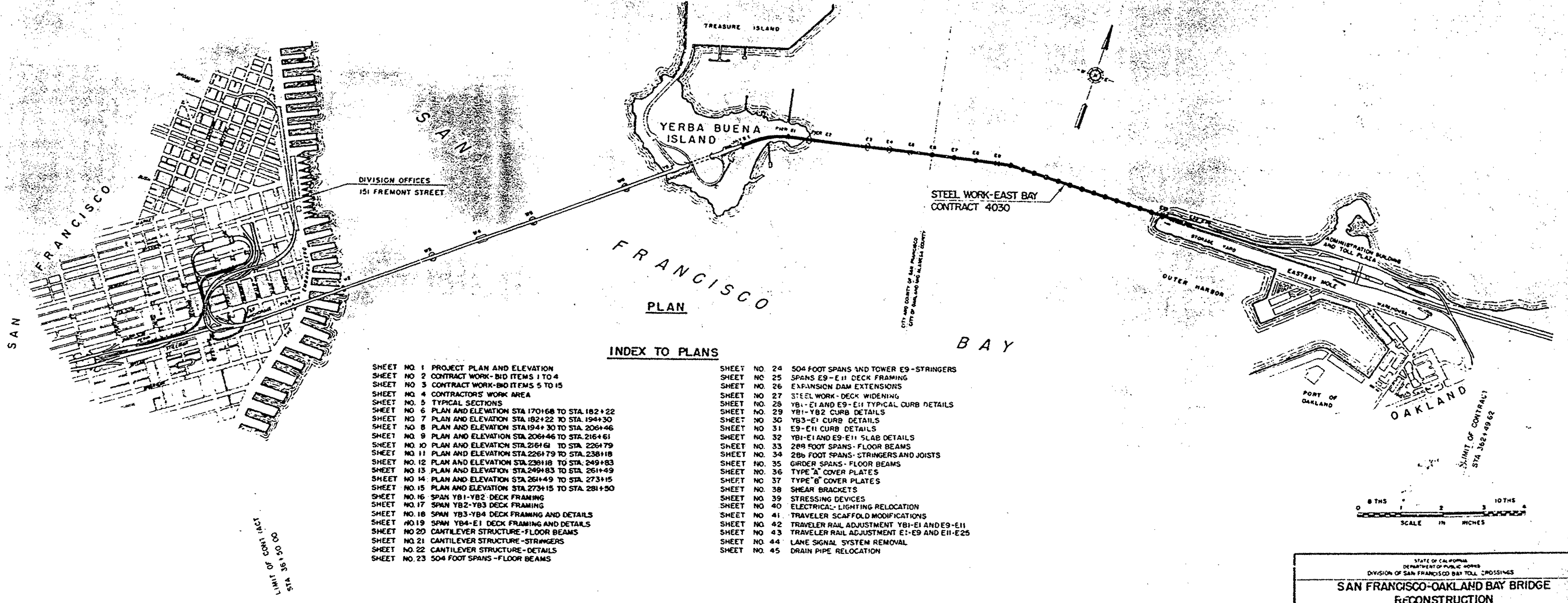
Reconstruction Steel Work - East Bay (Contract No. 04-4030)

The as-built drawings, which are contained in these CDs, are scanned from drawings of the existing structure for the convenience of the contractor and as a means to convey to the contractor the available information regarding the existing structure. It is to be understood that no claim is being made as to the accuracy or completeness of the said information and that the State of California or its officers or agents shall not be responsible for the manner in which the contractor interprets and uses this information or for the accuracy, currency or completeness of these scanned as-built drawings. The contractor shall be responsible to obtain, at the contractor's expense, any additional information that the contractor deems necessary for completely and accurately assessing the existing conditions of the structure. The contractor shall not be entitled to any compensation for any claim arising from inaccuracy or insufficiency of these as-built drawings or in anyway related to these drawings.

PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED October 6, 1961
DIRECTOR OF PUBLIC WORKS



ELEVATION



PLAN

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APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER
LICENSE 7187

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

PROJECT PLAN AND ELEVATION

MARK	DATE	DESCRIPTION	BY	CH'K
1	[illegible]	*As built without revisions*	CB	EEF
		REVISION		

SCALE 1" = 1000' | BRIDGE 33-25 34-03 34-04 | SHEET NO. 1 | DRAWING C 4030-R

<table>
<tr><th>NO.</th><th>BID ITEM</th><th>QUAN.</th><th>UNIT</th><th>DESCRIPTION</th></tr>
<tr><td>1</td><td>removing concrete.</td><td>2442 ⚠1</td><td>cubic yards</td><td>Shall consist of all concrete removal, except [illegible] the installation of shear brackets, as shown [illegible] as specified.

Reinforcing steel exposed by the removal of [illegible] carefully preserved during concrete removal [illegible] cut except as may be necessary to free [illegible] Exposed reinforcing steel shall be thoroughly [illegible] concrete and other foreign materials and full [illegible] therefor shall be included in the unit price [illegible]

Full compensation for making saw cuts for removal of [illegible] where required under this item and as shown on the [illegible] be included in the unit price paid for this item.

The quantity of concrete removal shall be computed [illegible] from plan dimensions except that, where such dimensions [illegible] shown, field measurements taken before removal shall [illegible]</td></tr>
<tr><td>2</td><td>Class L concrete.</td><td>2656 ⚠1</td><td>cubic yards</td><td>Shall conform to the requirements of Section 25, Section [illegible] as modified hereinafter, Section 27 and Section 26, [illegible] consist of furnishing and placing all concrete as shown on the plans and as specified.

The unit weight (loose weight) of the lightweight fine aggregate, when tested in a saturated, surface dry condition in accordance with Test Method No. Calif. 212, shall be not more than 70 pounds per cubic foot nor less than 55 pounds per cubic foot.

The unit weight (loose weight) of the lightweight coarse aggregate, when tested in a saturated, surface dry condition in accordance with Test Method No. Calif. 212, shall be not more than 55 pounds per cubic foot nor less than 40 pounds per cubic foot.

Lightweight coarse aggregate and lightweight fine aggregate shall conform to the following requirements as determined by Test Method No. Calif. 202 subject to adjustment of percentages for variations in specific gravity of each size of material.

<table>
<tr><th></th><th colspan="3">Percentage (by Weight) Passing Sieves</th></tr>
<tr><th>Sieve Size</th><th>5/8" x No. 4</th><th>Fine</th><th>Combined Aggregate</th></tr>
<tr><td>3/4"</td><td>100</td><td>---</td><td>100</td></tr>
<tr><td>5/8"</td><td>20-50</td><td>100</td><td>55-80</td></tr>
<tr><td>No. 4</td><td>0-10</td><td>90-100</td><td>40-60</td></tr>
<tr><td>No. 8</td><td>0-5</td><td>65-90</td><td>30-50</td></tr>
<tr><td>No. 16</td><td>---</td><td>45-70</td><td>20-35</td></tr>
<tr><td>No. 30</td><td>---</td><td>25-45</td><td>13-23</td></tr>
<tr><td>No. 50</td><td>---</td><td>10-25</td><td>5-15</td></tr>
<tr><td>No. 100</td><td>---</td><td>2-12</td><td>0-5</td></tr>
<tr><td>No. 200</td><td>0-2</td><td>0-4</td><td>0-2</td></tr>
</table>

Within the above limitations, the relative proportions of coarse and fine aggregates for lightweight concrete shall be adjusted as ordered by the Engineer to produce lightweight concrete of the weight and strength specified.

Lightweight aggregate shall be stored in covered bins and maintained in a saturated condition for at least 18 hours prior to being placed in a mixer.

Each batch of ready-mixed concrete delivered at the job site shall be accompanied by a ticket showing volume of concrete, the weight of cement in pounds, the weight of mix water in pounds, and the total weight of all ingredients in pounds. The ticket shall also show the time of day at which the materials were batched and the reading of the revolution counter at the time the truck mixer was charging.

Preformed expansion joint filler shall conform to the requirements of AASHO Designation M153, Type I.</td></tr>
<tr><td>3</td><td>bar reinforcing steel.</td><td>170,972 ⚠1</td><td>pounds</td><td>Shall conform to the requirements of Section 28 for intermediate grade steel, except that plain bars for bar reinforcing steel trusses shall be structural grade steel with a maximum carbon content of 0.30 percent. Welding shall conform to the requirements of Section 67. Welds of bar reinforcing steel trusses shall be arc or resistance welds which shall resist without failure loads of 2,000 pounds in double shear.</td></tr>
<tr><td>4</td><td>structural carbon steel.</td><td>854,118 ⚠1</td><td>pounds</td><td>Shall conform to the requirements of Section 31 and 67 and shall consist of furnishing and installing all new structural and miscellaneous steel, except materials specifically provided under Bid Items 5, 6, 7, 8, 9, 12, 14, and 15, complete in place as shown on the plans and as specified. Measurement shall be by the pound, scale weight, including welds and galvanizing.

All steel shapes, plates, and bars to be furnished [illegible] under this item shall conform to the requirements of [illegible] Designation: A7.

Where existing concrete is to be removed and replaced [illegible] dry-pack, as shown on the plans for the installation [illegible] brackets, such concrete removal, including [illegible] dry-pack work will not be measured for payment [illegible] sation therefor shall be included in the unit price [illegible] this item.

Expansion dam assemblies and expansion gratings [illegible] dip galvanized after fabrication.

Welded studs shall be full base threaded studs, as [illegible] by Nelson Stud Welding Division, Gregory Industries [illegible] shall be furnished and installed as shown on the [illegible] specified, and shall be measured and paid for [illegible] item.</td></tr>
</table>

GENERAL NOTES - ALL WORK

[illegible] specifications refer to the [illegible] Sections as prepared [illegible]

[illegible] construction, and other in- [illegible] will be made available [illegible] to those interested.

[illegible] and elevations of existing struc- [illegible] from original construction [illegible] of typical conditions; [illegible] to be anticipated. Where [illegible], the Contractor shall verify [illegible] conditions and dimensions, [illegible] details of work to be sub- [illegible] Engineer.

[illegible] designated to be removed and relocated, [illegible] stored shall be removed with all reason- [illegible] cleaned of all foreign material, ready [illegible] Materials to be stored shall be transported to and stored in the Division's Storage Yard on the East Bay Mole in locations to be designated and as directed by the Engineer. Any materials designated to be removed and re-used or stored which are unnecessarily damaged by the Contractor or by others while under his control, shall either be repaired to the Engineer's satisfaction or shall be replaced in kind at the Contractor's expense.

Materials designated to be stored shall be segregated according to size, type, shape or other category and shall be properly identified by tag, stencil mark, or other means approved by the Engineer. All bolts shall be stored with washers on and nuts run down.

5. The removal and disposal of materials not re-used or stored shall comply with the requirements of Section 10 and the following modifications.

Except as otherwise specifically provided, materials removed and not reinstalled shall become the property of the Contractor and shall be disposed of by him outside of the contract limits and full compensation therefor shall be included in the unit and lump sum prices paid for the various bid items requiring such work.

Removed concrete shall be broken into pieces not larger than three feet in greatest dimension, reinforcing steel projecting therefrom cut off flush, and the concrete shall be dumped and spread evenly in locations designated by the Engineer on the East Bay Mole.

NEW AND STATE-FURNISHED MATERIALS

6. Full compensation for furnishing and installing any new materials and doing all the work required to adapt new or State-furnished materials to locations shown on the plans shall be included in the prices paid for the various items of work. Wherever suitable State-furnished materials are not available, the Contractor shall provide new materials as required in accordance with the specifications.

⚠1 [illegible] See Contract Change Order No 8

7. All portland cement concrete shall be Class L, shall conform to the requirements of Sections 26 and 27 and [illegible] compressive strength of 3,000 psi [illegible] weight of 105 pounds per cubic [illegible] of 28 days.

[illegible] dry-pack grout shall conform to the [illegible] requirements of Sections 26 and 27 and shall [illegible] by volume of Type II portland cement [illegible] sand with only enough water to [illegible] All grout shall have a com- [illegible] of 3,000 psi at the end of 28 days and [illegible] finish the adjacent concrete [illegible]

[illegible] grout and dry pack grout as shown [illegible] specified will not be measured, but [illegible] shall be included in the [illegible] items of work and no addi- [illegible] made therefor.

[illegible] for bonding new concrete or grout to [illegible] between joists and deck, sur- [illegible] concrete shall be roughened by wet [illegible] to a minimum depth of 1/2-inch [illegible] flushed with a high pressure

CONCRETE AND GROUT (Cont'd)

air-water jet so that a clean surface of sound concrete is exposed. Preparation for bonding new dry-pack grout to the deck concrete shall consist of wire brushing and such other cleaning of the existing concrete surface as is required to provide a clean surface of sound concrete. The surfaces so exposed shall be kept continuously wet for not less than 24 hours before placing new concrete or grout and, at the time of placing, shall be clean and slightly damp. Holes drilled for grouting shall be treated in the same manner as provided for surfaces receiving grout or new concrete except that cleaning shall be performed by high pressure air-water jet, and shall be free of all foreign and loose material at the time of grouting. Areas to receive epoxy resin adhesive shall be allowed to dry.

EPOXY ADHESIVE AND MORTAR

10. An epoxy-thiokol adhesive coating to bond new concrete or grout to old concrete shall be applied to prepared surfaces of existing concrete as a brushed coating not less than 1/16-inch thick in areas where the finished surface is to be less than two inches above the surface of existing concrete, and shall be followed by placement of grout or concrete of 1-1/2 inch maximum slump at such times and in such a manner as to secure the most effective bond between new concrete or grout and old concrete.

Mixing and application of all epoxy-thiokol adhesive coating shall be personally supervised by a qualified technical representative of the formulator. The procedures and materials to be used and the qualifications of the technical representative shall be subject to the approval of the Engineer and no adhesive coating shall be placed until such approval has been granted.

Epoxy-thiokol adhesive coating shall be prepared as follows:

Description	Composition by Weight	
	Each	Combined Mix
Can A		
Shell Epon Resin 815, or equal	100%	60.7%
Can B		
Thiokol LP-3, or equal	80%	26.6%
DMP-30, or equal	20%	6.7%
	100%	100.0%

Into the combined mix of Cans A and B, add Murter White Silica, or equal, to produce the proper consistency for application as an adhesive coating. No epoxy-thiokol adhesive shall be applied when either the ambient or concrete temperature is lower than 60° F.

Epoxy-thiokol adhesive coating which sets up in the opinion of the formulator's representative or the Engineer before the concrete or grout is placed shall be removed by methods approved by the Engineer and fresh epoxy-thiokol adhesive coating shall be applied before the concrete or grout placed as shown on the plans and as specified: such work will not be measured but full compensation therefor shall be considered to be included in the unit price paid for removing concrete.

Should application of heat be required to complete the cure of the epoxy-thiokol adhesive coating, the heat shall be distributed evenly in such a manner that the temperature rise and fall of the concrete shall not exceed 20° F. per hour. Full compensation for application of heat required to complete the cure of epoxy-thiokol adhesive shall be included in the unit price paid for concrete removal.

Full compensation for furnishing and applying the required epoxy-thiokol adhesive coating shall be included in the price paid for concrete removal, and no additional allowance will be made therefor.

STEEL WORK

11. Where removing or removing and reinstalling existing structural steel is required to perform the work of this contract and such work is not specifically provided in the bid item descriptions, such removing or removing and reinstalling shall be performed by the Contractor as shown on the plans and as specified and will not be measured but full compensation therefor shall be considered to be included in the unit or lump sum prices paid for the bid items for which such removing or removing and reinstalling is required.

STEEL WORK (Cont'd)

12. Dimensions, weights and properties of rolled steel structural shapes shall match those set forth in the Steel Construction Manual of the American Institute of Steel Construction.

13. Welded steel members shall be fabricated to the dimensional tolerances set forth in the Standard Specifications for Welded Highway and Railway Bridges of the American Welding Society.

14. The Contractor shall provide a sufficient quantity of identified samples of A440, A441 and T-1 steel ordered under this contract to perform the tests required for qualification of welders, welding operators, and welding procedures. Such samples will not be measured but full compensation for furnishing and testing such samples shall be included in the unit prices paid for the structural steel bid items and no additional compensation will be allowed therefor.

15. High strength bearing bolts with their nuts and hardened washers shall be furnished and installed in accordance with the requirements of Section 31 except that nuts shall be tightened by the calibrated wrench method. High strength bearing bolts shall be of the interference-body type as manufactured by Lamson and Sessions.

All high strength bearing bolts with their nuts and hardened washers will be measured and paid for under Bid Item 4.

16. Heads of bolts installed on longitudinal members shall face the center line of the lower deck, and on transverse members shall face the traffic flow of the completed bridge.

ELECTRICAL AND MECHANICAL WORK

17. Electrical and mechanical work shall conform to the requirements of Sections 60 and 62, and the following modifications.

Full compensation for galvanizing required for electrical and mechanical work shall be considered as included in the unit prices paid for the various items of work.

Cleaning and painting of electrical and mechanical work shall conform to the requirements of Sections 32, 33, 60, and 62, except that full compensation therefor shall be included in the lump sum price paid for cleaning and painting.

18. All ferrous fastenings and supports shall be hot-dip galvanized. The Contractor shall furnish and install all fastenings and supports required to provide pipe and conduit complete in place and in operable condition and full compensation therefor shall be included in the prices paid for the various items of work.

The interior of each conduit shall be clean before installation of cable or wire, and full compensation for required cleaning shall be considered as included in the price paid per linear foot for the cable or wire to be installed.

19. The Contractor shall furnish and install an approved insulating material between dissimilar metals to prevent galvanic action.

20. Full compensation for all additional labor and materials not shown on the plans or called for herein and for furnishing and installing materials shown on the plans but not covered under specific bid items, but which are necessary to provide the electrical and mechanical work complete and in satisfactory operating condition shall be considered as included in the prices paid for the electrical and mechanical work or units thereof and no additional compensation will be allowed therefor. The use of State-furnished materials does not relieve the Contractor of his responsibility to provide the electrical and mechanical systems complete and in satisfactory operating condition.

21. All new materials and equipment in electrical and mechanical work furnished by the Contractor shall match existing materials in the project.

22. Existing electrical and mechanical systems and other utilities shall be maintained in operable condition equivalent in the opinion of the Engineer to that existing at the time construction is begun, and full compensation for such maintenance including the installation and removal of temporary facilities required to provide uninterrupted services shall be considered as included in the prices paid for the various contract items of work and no additional payment will be allowed therefor.

PROJECTS ENGINEER—LICENSE 1470

DATE APPROVED October 6, 1961

USE OF STATE-OWNED TRAVELER SCAFFOLDS

23. Two State-owned traveler scaffolds, No's. BB4 and BB5 on the east bay spans and two State-owned traveler scaffolds, No's. BT1 and BT2, on the west bay spans are available for use by the Contractor at his option subject to the following requirements.

a. Not less than two State-owned traveler scaffolds shall be available at all times for use by bridge maintenance forces on the east bay spans.

b. Prior to any use by the Contractor of State-owned scaffolds BB4 and BB5, the installation of air, electric, water, and control systems under Bid Item 9 shall be completed.

c. Whenever the Contractor in the progress of his work meets a scaffold used by the maintenance forces, he shall trade it for the last of his train, transfer materials and equipment from one to the other, and put both scaffolds into the condition suitable for the changed occupancy and use. The transfer shall be accomplished with the least possible interference with maintenance operations.

d. The State will furnish the Contractor extension beams, hangers, and accessories required in moving the scaffolds across expansion joints. This material shall be returned to the State in good condition immediately following each use.

e. The State-owned traveler scaffolds and the traveler rail system were designed to be used for maintenance purposes. Their capacities for performing the work of this contract safely without adaptation are limited. Therefore, it shall be the Contractor's responsibility to determine the capacities of the State-owned traveler scaffolds No's. BB4, BB5, BT1, and BT2 and the existing and altered traveler rail system and to design and construct any additional alterations required thereon to insure their safety under any loads that may be imposed upon them, to construct any other structural, mechanical, electrical, or other alteration required in the performance of the contract work, and to repair and maintain the scaffolds in operable condition during the contract period. Upon completion of the work, the traveler scaffolds shall remain in place on the east bay spans at locations designated by the Engineer and the Contractor shall restore the traveler scaffolds and traveler rail system to a condition suitable for maintenance use as approved by the Engineer. Furnishing all materials and doing all work required to move and adapt the scaffolds and adapt the traveler rail system as required in this note and which are not provided under Bid Items 8 and 9 will not be measured but will be considered to be for the Contractor's convenience and full compensation therefor will be considered to be included in the unit and lump sum prices paid for the various items of work.

TRAVELER SCAFFOLD AND RAIL SYSTEM MODIFICATIONS

24. Detailed plans of modifications of State-owned traveler scaffolds and of the traveler rail system and construction details of all other scaffolds which will be used by the Contractor, together with proposed loadings and procedures of use, shall be submitted to the Engineer for approval.

APPROVAL RECOMMENDED BY [illegible]

MARK	DATE	DESCRIPTION	BY	CH'K
⚠1	8-1-63	As built with revisions	[illegible]	EEF
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

CONTRACT WORK - BID ITEMS 1 TO 4

SCALE NONE | BRIDGE 33-25 34-03 34-04 | SHEET NO. 2 | DRAWING C-4030-2R

DATE APPROVED October 6 1961

APPROVAL RECOMMENDED BY [illegible] SUPERVISING BRIDGE ENGINEER

NO.	BID ITEM	QUAN.	UNIT
5	high strength structural steel.	5,705,906 ⚠1	pounds

DESCRIPTION

Shall conform to the applicable requirements of Section 31 and shall consist of furnishing and installing all steel designated on the plans to be A440 steel or A441 steel, complete in place as shown on the plans and as specified.

Steel designated on the plans as A441 steel shall be a high strength low alloy steel conforming to the requirements of ASTM Designation: A441.

Steel designated on the plans as A440 steel shall be a high strength structural steel conforming to the requirements of ASTM Designation: A440 as modified herein. For material 1/2-inch and under in thickness and all rolled sections with webs 1/2-inch and under in thickness, the maximum carbon content shall be 0.23 percent (ladle analysis) and the minimum yield strength shall be 45,000 psi; all other requirements of ASTM Designation: A440 shall apply. A440 steel plates over 1/2-inch in thickness shall conform to all requirements of ASTM Designation: A440.

Welding of high strength structural steel shall conform to the requirements of Section 67, Chapter I; Section 67, Chapter III articles (b), (h), (i); and the following modifications.

In lieu of the requirements of the indicated provisions of the Standard Specifications for Welded Highway and Railway Bridges of the American Welding Society the following shall apply.

Appendix D, paragraph D105(a).--Not less than one test weld shall be made for each procedure and position in each thickness of material to be welded in construction.

Appendix D, Table D-1.--

Actual Thickness to be Welded in Construction	Test Plate Thickness	Number and Type of Tests Required: Reduced-Section Tension (See Fig. D-6)	Free Bend (See Fig. D-7)	Root Bend (See Fig. D-8)	Face Bend (See Fig. D-8)	Side Bend (See Fig. D-9)
3/8-inch	3/8-inch	2	2	2	2	--
Over 3/8-inch	Actual Thickness	2	2	--	--	4

Appendix D, Fig. D-10.--Order of Removal of Test Specimens from Welded Test Plate (for Plate Over 3/8-inch Thick)

Appendix D, paragraph D109(a).--The tensile strength shall not be less than the following.

Thicknesses 3/4-inch and under
ultimate strength . . . 70,000 psi min.
Thicknesses over 3/4-inch to 1-1/2 inch inclusive
ultimate strength . . . 67,000 psi min.

In lieu of the number of sample joints (test welds) required for qualification of welding procedures set forth in Test Method No. Calif. 601-C, Part II, paragraph B.3.a., not less than one sample joint (test weld) shall be made for each procedure and position in each thickness of material to be welded in construction.

Physical property requirements for the mechanical properties of weld metal test set forth in Test Method No. Calif. 601-C, Part II, are as follows.

free bend specimens . . . 25% min. elongation
round tensile specimen . . . 70,000 psi min. tensile str.
. . . 25% min. elongation
. . . 50% min. reduction in area.
side bend specimens . . . pass

NO.	BID ITEM	QUAN.	UNIT
6	structural steel, T-1.	422,667 ⚠1	pounds

Shall conform to the applicable requirements of Section 31 and shall consist of furnishing and installing all steel designated on the plans to be T-1 steel including stressing and all other work required to provide the T-1 steel complete in place as shown on the plans and as specified.

T-1 steel shall be a heat-treated, constructional alloy steel of firebox quality as manufactured by the United States Steel Corporation, or equal, conforming to the following provisions.

T-1 steel shall conform in all respects to the requirements of Section 63, paragraph (b)(1). Testing of T-1 steel shall conform to the requirements of Section 63, paragraph (b)(4).

Welding of T-1 steel shall conform to the requirements of Section 67, Chapter I; Section 67, Chapter III, articles (c), (h), and (i); and the following modifications.

In the qualification of welders, welding operators, and welding procedures, the standard guided-bend test jig of the American Welding Society shall be modified to use a 1-1/4 inch radius mandrel instead of a 3/4-inch radius mandrel.

In lieu of the requirements of the indicated provisions of the Standard Specifications for Welded Highway and Railway Bridges of the American Welding Society the following shall apply.

Appendix D, paragraph D105.(a).--Not less than one test weld shall be made for each procedure and position in each thickness of material to be welded in construction.

Appendix D, Table D-1.--

Actual Thickness to be Welded in Construction	Test Plate Thickness	Number and Type of Tests Required: Reduced-Section Tension (See Fig. D-6)	Free Bend (See Fig. D-7)	Root Bend (See Fig. D-8)	Face Bend (See Fig. D-8)	Side Bend (See Fig. D-9)
3/8-inch	3/8-inch	2	2	2	2	--
Over 3/8-inch	Actual Thickness	2	2	--	--	4

Appendix D, Fig. D-10.--Order of Removal of Test Specimens from Welded Test Plate (for Plate Over 3/8-inch Thick)

Appendix D, paragraph D109(a).--Tensile strength shall not be less than 115,000 psi.

Appendix D, paragraph D109(b).--The elongation shall not be less than 18 percent.

In lieu of the number of sample joints (test welds) required for qualification of welding procedures set forth in Test Method No. Calif. 601-C, Part II, paragraph B.3.a., not less than one sample joint (test weld) shall be made for each procedure and position in each thickness of material to be welded in construction.

Physical property requirements for the mechanical properties of weld metal test set forth in Test Method No. Calif. 601-C, Part II, are as follows.

free bend specimens . . . 16% min. elongation
round tensile specimen . . . 115,000 psi min. tensile str.
. . . 16% min. elongation
. . . 50% min. reduction in area.
side bend specimens . . . pass

The State will furnish two stressing devices as shown on the plans for the Contractor's use during stressing operations. The stressing devices are available at the Division's office, 151 Fremont Street, San Francisco.

The Contractor will be required to furnish grip seats and rods and such other items as may be required for his operations. All Contractor-furnished items will be considered as being furnished for the Contractor's convenience, shall be approved by the Engineer and shall remain the property of the Contractor.

The State-furnished stressing devices shall be adapted as required during the course of the work, maintained in working condition at all times and stored on completion of the work.

The Contractor shall conduct tests, to be witnessed by the Engineer, to demonstrate that the jacks are capable of rated operation and that the State-furnished stressing devices are each capable of developing a tension of 400,000 pounds in actual use. Gages shall be re-calibrated and calibration curves shall be delivered to the Engineer before the devices are used.

The T-1 steel cover plates shall be stressed within a tolerance of plus five percent to minus zero percent of the initial prestress force specified on the plans.

T-1 steel cover plates that cannot be drawn tight to the existing flange by tightening the high strength bearing bolts (due to the presence of burrs, trapped drilling refuse or other obstruction) shall be separated from the flange and the interfaces cleaned of all obstructing material. After cleaning of the interfaces, the plates shall be retensioned and rebolted.

Red lead paste shall consist of red lead and linseed oil conforming to the requirements of Section 32 thoroughly ground together to form a paste of such consistency that it can be molded without crumbling but will not flow. Where application of red lead paste is indicated on the plans or required by the Engineer, voids shall be completely filled with red lead paste and such red lead paste will not be measured but full compensation for furnishing and placing all materials and doing all work required therefor shall be included in the unit price paid for T-1 steel under this bid item.

NO.	BID ITEM	QUAN.	UNIT	DESCRIPTION
7	steel curb alterations.	3,283.78 ⚠1	linear feet	Shall conform to the requirements of Section 31 and shall consist of removing, altering, and reinstalling steel curb, including making all connections, plugging holes and furnishing and installing all plates, shapes, anchor bolts and other fastenings, and all other new materials required and doing all work required to provide the reinstalled steel curb complete in place as shown on the plans and as specified. Steel curb materials not reinstalled shall be removed and stored. New structural steel shall conform to the requirements of ASTM Designation: A7. New raised pattern floor plates, if required, shall be United States Steel Pattern M-1 or Central Knobby as required to match existing. Measurement shall be by the linear foot along the face of the curb after reinstallation.
8	Remodeling and adjusting traveler rails.		LUMP SUM	Shall conform to the requirements of Section 31 and shall consist of: removing, altering, and reinstalling traveler rail connections and hangers; furnishing and installing bent plates, shims, clamps, clip angles, rods, and all other new materials required; making all adjustments of the traveler rail system required to perform the work; and, upon completion of the work, providing the rails aligned and set to the specified grade with hanger rods adjusted to share the loads, all as shown on the plans and as specified.
9	altering traveler scaffolds.	2	each	Shall consist of altering the State-owned traveler scaffolds as required to furnish and install the air, electrical, water and control systems and all other new materials required to provide the scaffolds complete and in operating condition as shown on the plans and as specified. All miscellaneous materials, parts, and equipment shall match corresponding materials, parts, and equipment on the West Bay upper deck scaffolds.
10	Cleaning and painting.		LUMP SUM	

Shall conform to the requirements of Sections 32 and 33 and shall consist of: all cleaning required to prepare surfaces for paint; to prepare surfaces for embedment in concrete or grout; and to prepare contact surfaces between existing members, T-1 steel cover plates, and of fill plates incidental to the T-1 steel cover plates; and all painting required in the work of this contract; all as shown on the plans and as specified.

STEEL CLEANING AND PAINTING SCHEDULE

Description of Surface	Cleaning and Painting Systems Required
existing, reinstalled, or ungalvanized new, metal surfaces to be embedded in concrete or grout	I-a
contact surfaces not designated to receive red lead paste between T-1 steel cover plates, existing members, and of fill plates incidental to the T-1 steel cover plates	I-a
existing painted steel surfaces designated to receive red lead paste	II-a
T-1 steel contact surfaces designated to receive red lead paste	I-b
new galvanized surfaces to be embedded in concrete	II-a
new galvanized surfaces not to be embedded in concrete	II-c
existing steel paint surfaces damaged by construction operations	I-c
existing painted or bare surfaces exposed by removal of materials	I-c
interior surfaces of luminaire poles to be reinstalled	I-c
exposed surfaces of all new and reinstalled steel not covered in the above descriptions	I-d

Cleaning systems designated in the steel cleaning and painting schedule are: I, sandblast cleaning; II, steam cleaning.

Painting systems designated in the steel cleaning and painting schedule are as follows.

a. No paint, except that steel to be embedded in concrete or grout and which will be exposed more than 48 hours between sandblast cleaning and placement of concrete or grout shall be protected by one coat of G-52. In no case shall such time of exposure exceed 14 days.

b. One coat G-52, and not less than two coats G-53.

c. One coat G-52, not less than two coats G-53, and one coat G-80.

d. Before erection; one coat G-52, one coat G-53, additional coats G-53 as required to provide a maximum elapsed time between coats of G-53 of six weeks and: after erection; one spot coat G-53, one full coat G-53, and one coat G-80.

Paints designated under painting systems, above, are as follows.

G-52 is pretreatment vinyl wash primer, State Specification 52-G-52.

G-53 is paint, primer, red lead, semi-quick drying, State Specification 58-G-53.

G-80 is aluminum paint finish coat, State Specification 54-G-80.

Pipe interiors and cast iron need not be sandblast cleaned or painted except that conduit shall conform to the requirements of Section 60.

Where sandblast cleaning of contact surfaces between existing members, T-1 steel cover plates, and of fill plates incidental to the cover plates is required, such sandblast cleaning shall be performed not more than 48 hours before fit-up.

Paint, if sprayed on, shall be brushed out around rivet and bolt heads and exposed edges to avoid bridging over crevices and re-entrant corners and to ensure even paint coats of the specified thickness.

Lower deck luminaires to be relocated and their ballasts shall not be painted except as required to touch up damaged paint.

NO.	BID ITEM	QUAN.	UNIT	DESCRIPTION
11	removing steel deck drains.	20,490 ⚠1	pounds	Shall consist of removing six and eight inch diameter steel drain pipe, together with drain outlets, flanges, fittings, and all materials incidental thereto as shown on the plans and as specified. All metallic materials removed and not reinstalled under Bid Item 12 shall be stored. Measurement shall be by the pound, scale weight, of metallic materials removed except that computed weights may be used where expressly permitted by the Engineer.
12	installing steel deck drains.	10,193 ⚠1	pounds	Shall consist of modifying and reinstalling State-furnished six and eight inch diameter steel drain pipe, drain outlets, flanges, fittings, and materials incidental thereto, together with furnishing and installing new asbestos gaskets and any new pipe, fittings, flanges, or other new materials required to provide the steel deck drains complete in place as shown on the plans and as specified. All pipe gaskets shall be new asbestos Johns Manville No. 60, or equal. All other new materials shall conform to the requirements of Section 31. Measurement shall be by the pound, scale weight, of metallic materials installed, including new and State-furnished, as shown on the plans and as specified except that computed weights may be used where expressly permitted by the Engineer.
13	removing and storing electrical materials.	14,840 ⚠1	pounds	Shall consist of removing and storing conduit, wires, cables, traffic signal heads, and junction boxes with their supports and fastenings, and all other electrical materials required to be removed and stored as shown on the plans and as specified. Measurement shall be by the pound scale weight.
14	removing, altering, and relocating upper deck pole-mounted luminaires.	24	each	Shall consist of: removing, altering, and reinstalling steel pipe handrailing; removing the existing pole-mounted luminaires together with their poles, lamps, and all other appurtenant materials; performing the required alterations; and reinstalling the luminaires, including furnishing and installing electrical and structural connections, new secondary wiring, and all other materials required to provide the reinstalled luminaires complete in place and in operating condition as shown on the plans and as specified. Removing, altering, and reinstalling steel pipe handrailing incidental to reinstalling the luminaires shall consist of removing existing handrailing, performing the required alterations and reinstalling the handrailing complete in place as shown on the plans and as specified including furnishing and installing all new materials required therefor with the following exception. The Contractor may, at his option, use State-furnished tees, flanges, and ball ornaments which are available on the East Bay Mole, subject to approval by the Engineer.
15	removing and remounting lower deck luminaires.	47	each	Shall consist of removing and temporarily relocating the lower deck sodium vapor luminaires as required to permit modifications of lower flanges of floor beams and subsequently remounting the luminaires on the modified floor beams, including furnishing and installing new secondary wiring, conduit, fastenings, fillers, and all other materials required to provide the remounted luminaires complete in place and in operating condition upon completion of the work as shown on the plans and as specified.

MARK	DATE	DESCRIPTION REVISION	BY	CHK
⚠1	11/63	As built with revisions	L.L.S.	E.E.F.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

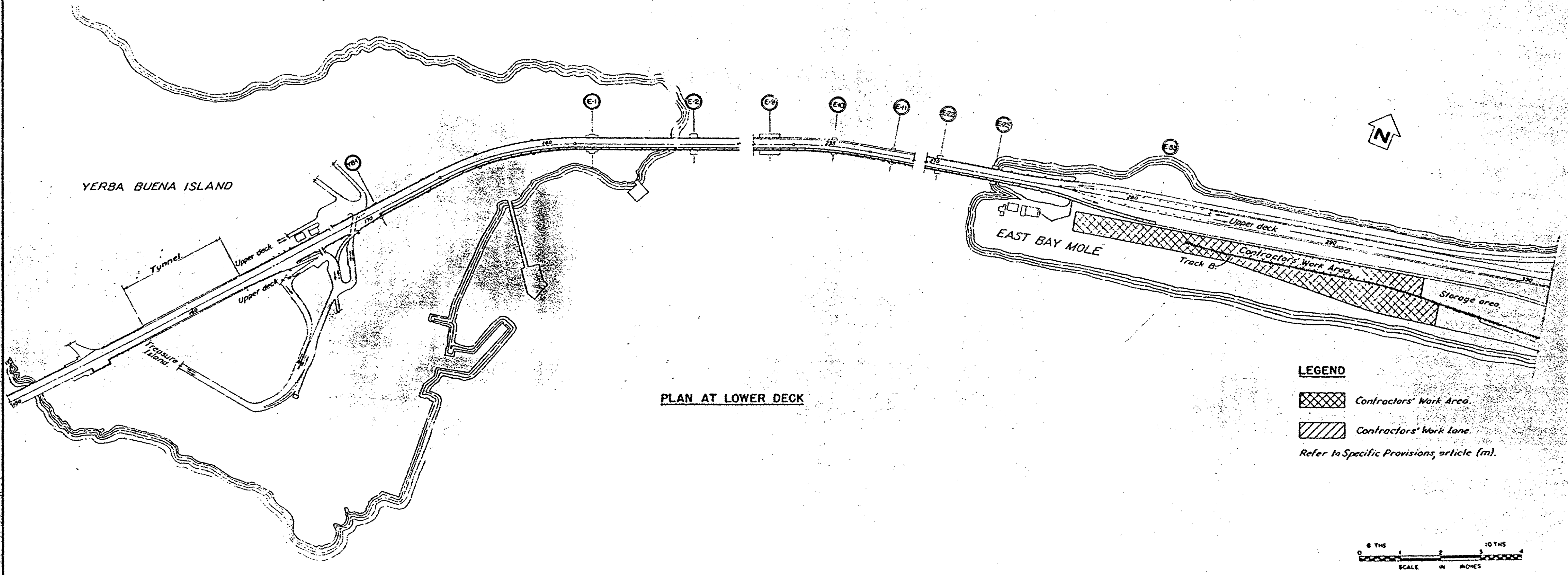
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

CONTRACT WORK-BID ITEMS 5 TO 15

SCALE NONE | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 3 | DRAWING [illegible]

PROJECTS ENGINEER — LICENSE 1479

DATE APPROVED October 6, 1961



PLAN AT LOWER DECK

MARK	DATE	DESCRIPTION REVISION	BY	CH'K
1	11.1.63	As built without revisions	CB	EEF

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

CONTRACTORS' WORK AREA

SCALE 1" = 200'	BRIDGE 33-25 34-03 34-04	SHEET NO. 4	DRAWING C 4030-4R

APPROVAL RECOMMENDED BY

DESIGN NOTES

Standard Specifications for Highway Bridges of the American Association of State Highway Officials (AASHO) modified and specified as follows:

H20-S16-44

Unit weight concrete, reinforced, 120lbs/cu.ft.

Reinforced concrete, light weight, f'_c = 3000 p.s.i., f_c = 1200 p.s.i., n = 18

Reinforcing steel, structural grade, f_s = 18000 p.s.i.

High strength structural steel

A 440 modified, f_s = 24000 p.s.i., f_y = 45000 p.s.i., f_u = 70000 p.s.i. min.

A 241, ¾" and less f_s = 27000 p.s.i., f_y = 50000 p.s.i., f_u = 70000 p.s.i.; over ¾" f_s = 24000 psi, f_y = 46000 psi, f_u = 67000 p.s.i.

T1, f_s = 45000 p.s.i., f_y = 100000 p.s.i., f_u = 115000 p.s.i.

High strength bearing bolts: Specifications for Structural Joints using ASTM A325 Bolts approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation, March 1960

The loading capacity of the stringers will be increased by bolting understringers to the bottom flange of the stringers.

The loading capacity of the floor beams will be increased:

(1) By bolting prestressed high strength steel cover plates to the bottom flange:

(a) The addition of metal will reduce the tensile stresses of the existing material under live load.

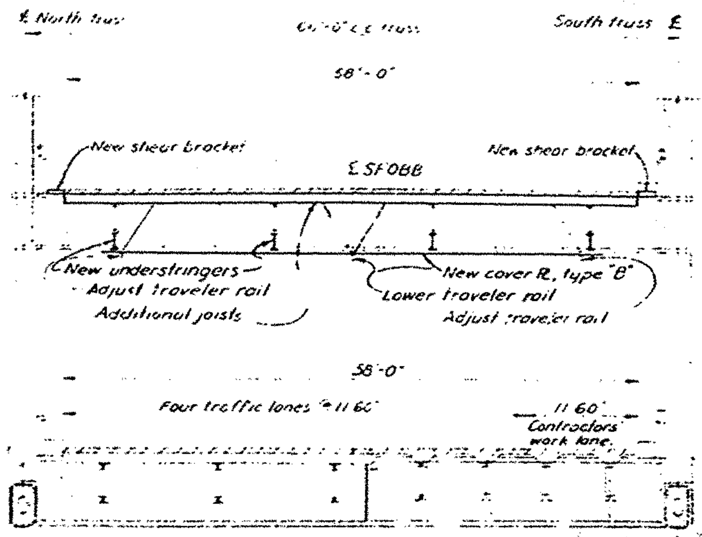
(b) By pretensioning the new cover plate an initial compressive force will be exerted on the bottom flange resulting in a reduction of the dead load tensile stresses. A greater portion of the working stresses of the existing material will thus be available for the live load.

(2) By bolting shear brackets to both ends of the top (compression) flange, bearing laterally against the concrete deck, a partial composite action of steel and concrete will be obtained, thus, reducing the live load stresses in the top flange.

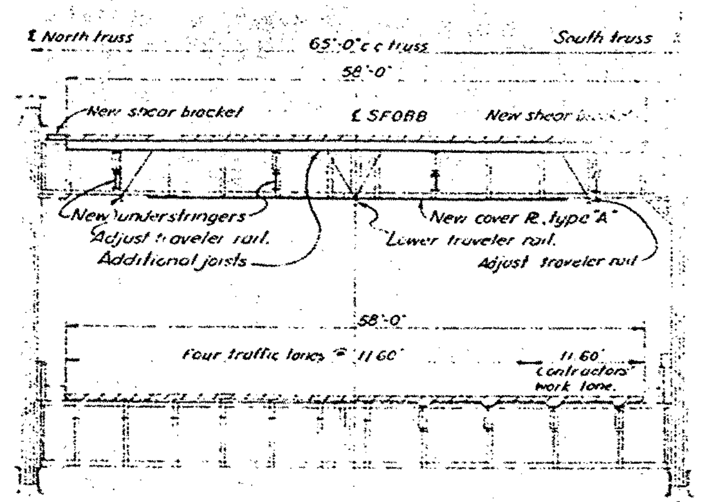
The loading capacity of the joists will be increased by addition of new joists.

PROJECTS ENGINEER — LICENSE 1479

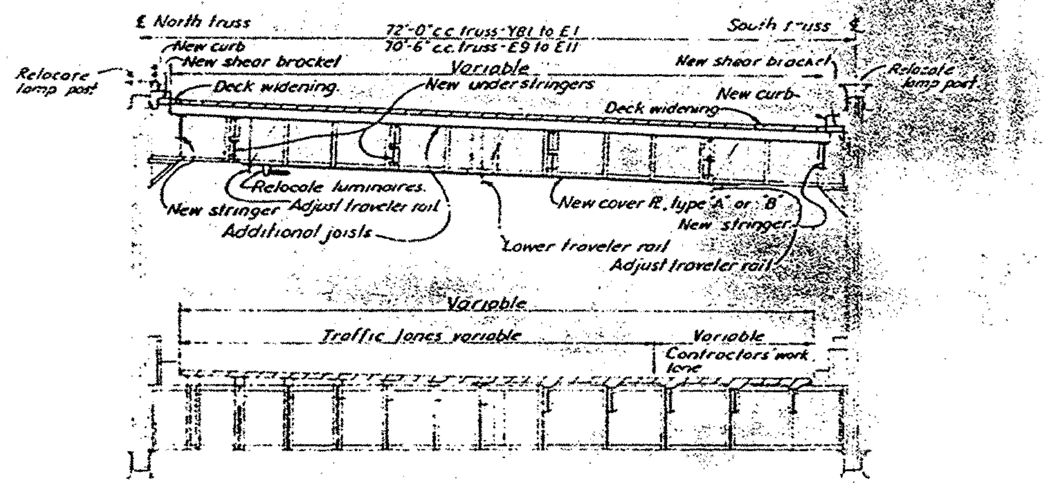
DATE APPROVED October 6, 1961



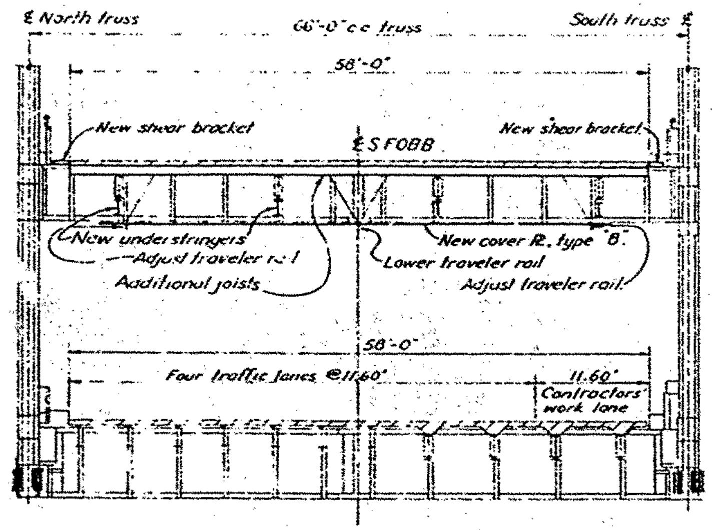
CANTILEVER STRUCTURE - PIER E1 TO E4



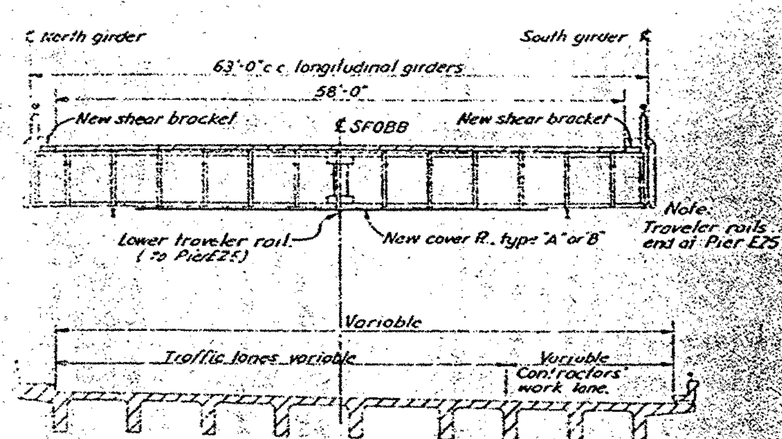
288 FT. SPANS - PIER E11 TO E23



288 FT. SPANS - PIER YB1 TO E 1 AND PIER E9 TO E11



504 FT. SPANS - PIER E4 TO E9



GIRDER SPANS — PIER E23 TO E33

SCALE IN INCHES

APPROVAL RECOMMENDED BY

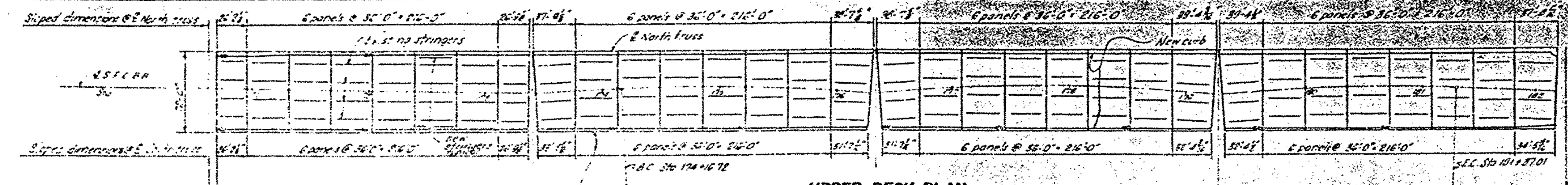
11.63	As built without revisions	CB	EEF
DATE	DESCRIPTION REVISION	BY	CH'K

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

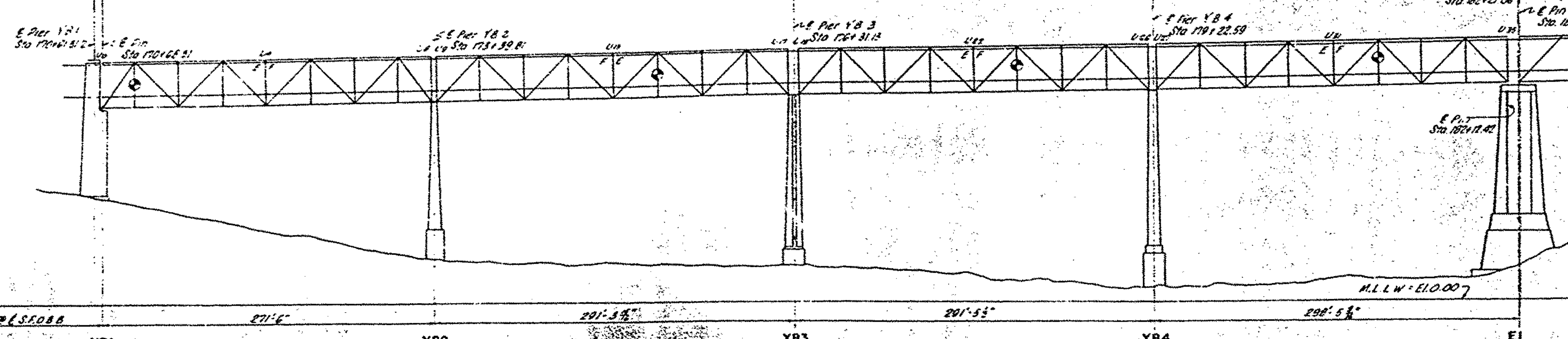
TYPICAL SECTIONS

SCALE ⅛" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 5 | DRAWING C-4030-5R

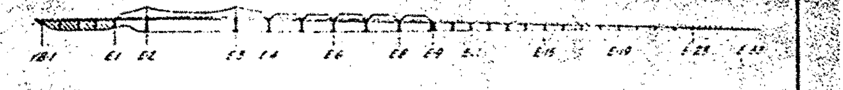


UPPER DECK PLAN

Note: Curved sections rotated about ℄ S.F.O.B.B. and ℄ Piers

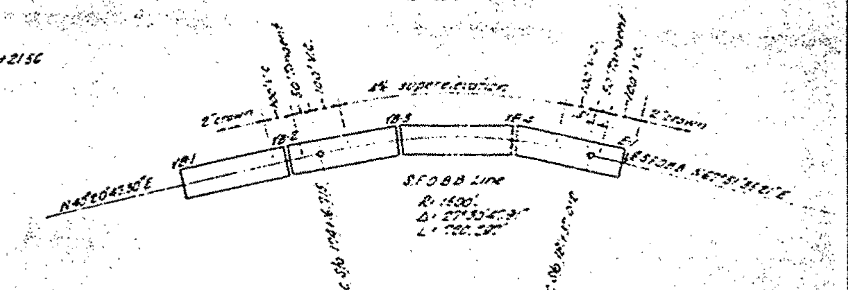


ELEVATION



LOCATION DIAGRAM

No Scale



SPAN LAYOUT
PIERS YB-1 THRU E-1

Scale: 1" = 200'

TABULATION OF QUANTITIES ⚠ *

No.	Bid item	Unit	U0	U1	U2	U3	U4	U5	U6	U7	U8 U9	U10	U11	U12	U13	U14	U15	U16	U17 U18	U19	U20	U21	U22	U23	U24	U25	U26 U27	U28	U29	U30	U31	U32	U33	U34	U35	Total this sheet	Accumulated total
1	Removing concrete	C.Y.	0.20	0.60	0.59	0.60	0.61	0.59	0.58	0.46	0.62	0.59	0.59	0.58	0.59	0.58	0.58	0.59	0.62	0.59	0.59	0.58	0.69	0.58	0.58	0.69	0.62	0.59	0.59	0.58	0.59	0.58	0.58	0.59	—	18.39	18.39 *
2	Class L concrete	C.Y.	4.07	6.37	6.04	6.06	6.07	6.04	6.05	4.88	6.60	6.02	6.03	6.07	6.09	6.07	6.00	6.44	6.66	6.00	6.04	6.07	6.08	6.05	5.99	6.71	6.72	6.61	6.04	6.07	6.08	6.05	6.04	6.29	—	191.52	191.52 *
3	Bar reinforcing steel	Lbs.	2,176	2,410	2,523	2,576	2,732	2,732	2,732	1,373	2,817	2,790	2,797	2,796	2,812	2,807	2,799	2,844	2,865	2,817	2,829	2,829	2,805	2,801	2,793	2,852	2,867	2,795	2,806	2,805	2,710	2,705	2,708	2,582	—	83,427	83,427 *
4	Structural carbon steel	Lbs.	7,400	10,035	9,868	10,379	9,868	10,036	10,036	11,060	12,847	9,868	9,698	10,654	9,953	9,402	9,699	13,187	13,017	10,436	10,379	10,379	9,868	10,040	10,208	13,443	13,102	9,868	9,868	10,654	10,577	10,208	10,208	10,377	—	336,021	336,021 *
5	High strength structural steel	Lbs.	13,470	20,426	20,815	20,815	20,815	20,815	20,815	16,000	20,815	20,815	20,815	20,815	20,815	20,815	20,815	19,986	20,065	20,815	20,816	20,815	20,815	20,815	20,815	20,083	20,085	20,815	20,815	20,816	20,815	20,815	20,816	21,585	—	653,272	653,272 *
6	Structural steel T-1	Lbs.	4,767	4,957	4,746	4,746	4,753	4,746	4,740	4,734	3,473	4,746	4,747	4,749	4,735	4,739	4,729	4,741	3,465	4,741	4,756	4,746	4,739	4,759	4,731	4,735	3,468	4,741	4,778	4,744	4,738	4,741	4,732	4,742	4,738	62,702	62,702 *
7	Steel curb alterations	L.F.	28.89	72.05	72.01	72.03	72.00	72.03	72.41	52.48	75.17	72.02	71.99	72.02	72.01	72.85	71.98	71.43	77.50	72.01	72.02	72.02	71.99	72.03	72.01	75.77	75.76	72.04	72.00	72.00	72.01	71.99	72.02	36.42	—	2,269.77	2,269.77 *
8	Adjusting traveler rails	L.S.																																			
9	Altering traveler scaffolds (new)	Ea.	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	—		
10	Cleaning and painting	L.S.																																			
11	Removing steel deck drains	Lbs.	2,433	0	0	2,814	0	0	775	0	0	820	0	0	851	0	0	20	653	0	897	0	0	775	0	0	775	0	0	857	0	0	0	0	—	4,652	4,652 *
12	Installing steel deck drains	Lbs.	789	0	0	789	0	0	245	0	0	468	0	0	659	0	0	432	652	0	660	0	0	658	0	0	658	0	0	659	0	0	0	0	—	2,329	2,329 *
13	Removing and storing electrical materials	Lbs.	707	0	0	0	0	0	0	0	0	0	0	0	707	0	0	0	0	0	0	0	707	0	0	0	0	0	0	0	707	0	0	0	—	2,828	2,828 *
14	Relocating upper-deck luminaires	Ea.	0	2	0	0	0	2	0	0	0	2	0	0	2	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	—	16	16
15	Remounting lower-deck luminaires	Ea.	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	—	8	8

FLOOR STRENGTHENING REQUIREMENTS ⚠ *

Group	Item	U0	U1	U2	U3	U4	U5	U6	U7	U8 U9	U10	U11	U12	U13	U14	U15	U16	U17 U18	U19	U20	U21	U22	U23	U24	U25	U26 U27	U28	U29	U30	U31	U32	U33	U34
Outside stringers	1 Existing stringer - North (silicon steel)	24W74	27CF94	do	do	do	do	do	24CF74	27CF98	do	do	do	do	do	do	27CF100	do	27CF98	do	do	do	do	do	27CF96	do	27CF96	do	do	do	do	do	27CF100
	1 Existing stringer - South (silicon steel)	24W74	27CF94	do	do	do	do	do	24CF74	27CF98	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	1 New understringer - North (A440 steel)	16W58	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞" connecting bolts	42*	50	50	50	50	50	50	42*	50	50	50	50	50	50	50	52*	52*	50	50	50	50	50	50	54*	52*	50	50	50	50	50	50	52
	1 New understringer - South (A440 steel)	16W58	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞" connecting bolts	42*	50	50	50	50	50	50	42*	48	50	50	50	50	50	50	48*	48*	50	50	50	50	50	50	48	48	50	50	50	50	50	50	60
	1 New stringer - North	—	30W108	do	do	do	do	do	do	do	do	do	do	do	do	do	30W124	do	30W108	do	do	do	do	do	30W124	do	30W108	do	do	do	do	do	do
	New stringer - South	30W108	do	do	do	do	do	do	do	do	do	do	30W116	do	30W108	do	do	do	do	do	30W116	do	30W108	do	do	do	do	do	30W116	do	30W108	do	do
Interior stringers	2 Existing stringers (silicon steel)	24W74	27CF96	do	do	do	do	do	24CF74	27CF98	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	2 New understringers (A440 steel)	16W58	21W68	do	do	do	do	do	16W58	21W68	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞" connecting bolts	48	58	58	58	58	58	58	48	58	58	58	58	58	58	58	58, 56*	58, 58*	58	58	58	58	58	58	60, 58*	60, 58*	58	58	58	58	58	56	60, 58*
	Additional joists (A440 steel)	10W29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Joists	Number of joists	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Linear feet of joists	371.65'	396'	396'	396'	396'	396'	*396.5'	*330.4'	396.5'*	396.5'	396.5'	396.5'	396.5'	396.5'	396.5'	377.5'*	379.5'	396.5'	396.5'	396.5'	396.5'	396.5'	396.5'	*379.5'	380'*	396.5'	396.5'	396.5'	396.5'	[illegible]	396.5'	396.5'*
	Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Extensions of existing joists (carbon steel)	—	—	—	2L 3¼	—	—	—	—	—	—	—	2L 3¼	—	—	—	—	—	—	—	2L 3⅛	—	—	—	—	—	—	—	2L 3⅛	—	—	—	—
	Linear feet of joist extensions	—	—	—	7.74'*	—	—	—	—	—	—	—	7.87'*	—	—	—	—	—	—	—	7.67'*	—	—	—	—	—	—	—	7.67'*	—	—	—	—
	Number of splices	—	—	—	2	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—

Group	Item	U0	U1	U2	U3	U4	U5	U6	U7	U8 U9	U10	U11	U12	U13	U14	U15	U16	U17 U18	U19	U20	U21	U22	U23	U24	U25	U26 U27	U28	U29	U30	U31	U32	U33	U34	U35
Floor beams	Existing web (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Existing flange angles (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Existing cover plates (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Length	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	44'-2"	44'-0"	do	do	do	do	do	44'-2"	do	44'-0"	do	do
	New cover plate (T-1 steel) Type	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	B	B	B
	Size	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	Length	27'-3½"	54'-11"*	54'-0"	54'-4"	54'-0½"	54'-9"	54'-6½"	27'-2½"	35'-9"	54'-4"	54'-7½"	54'-10"	54'-5"	54'-6"	54'-2"	54'-7½"	35'-3½"	54'-7"	54'-4"	54'-9"	54'-6"	54'-6"	54'-3½"	54'-4½"	35'-3"	54'-7"	55'-8½"	54'-8"	54'-6"	54'-7"	54'-2½"	54'-7½"	34'-6½"
	Initial prestress - kips	140	272	272	272	288	272	272	272	142	272	272	272	288	272	272	272	142	272	272	272	288	272	272	272	142	272	272	272	288	272	272	272	145
	Number of end connecting bolts																																	
	Fixed end	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
	Stressing end	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	*Pairs of new strap brackets	2	2	2	1	2	2	2	2	4	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2

LEGEND

- ⊕ Existing lane signal control lights.
- ← Relocated deck drains (except existing at U0 North)
- ⚠ * Indicates location where quantities, dimensions or denominations are changed due to revision.

NOTES

1. Exact location of work will be determined in the field.
2. For type "B" cover plate size see Sheet No. 57.
3. For Deck Framing Plans see Sheets No. 16, 17, 18, 19

Mark	Date	Description	By	Ch'k
⚠ 1	#1.63	As built with revisions	L.L.S.	E.E.F.

REVISION

SCALE IN INCHES (8 THS / 10 THS, 0–4)

PROJECTS ENGINEER — LICENSE 5479

DATE APPROVED October 6, 1961

APPROVAL RECOMMENDED BY ... SUPERVISING BRIDGE ENGINEER LICENSE 5167

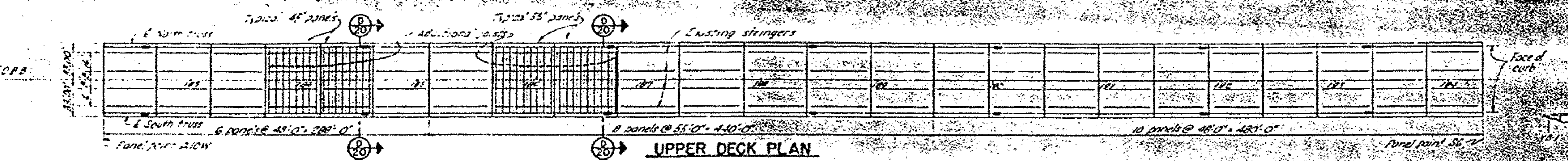
DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN AND DETAILS REVIEWED BY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

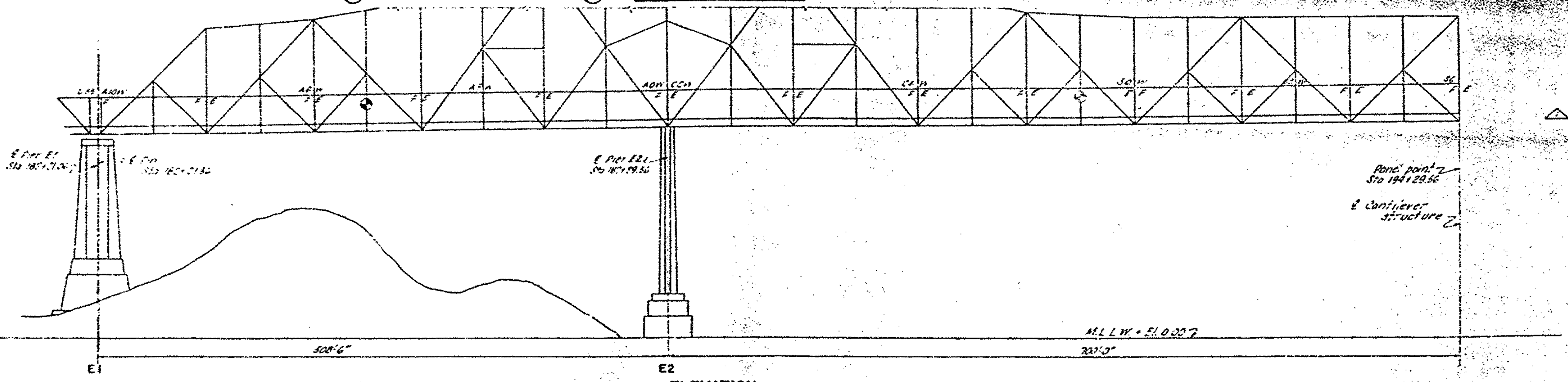
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK - EAST BAY

PLAN AND ELEVATION STA. 170+68 TO STA. 182+22

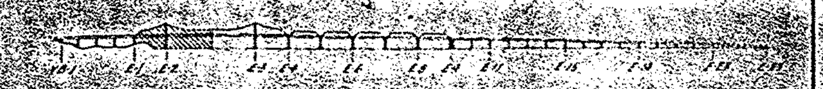
UNLESS NOTED SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No 6 | DRAWING C 4030-6R



UPPER DECK PLAN



ELEVATION



LOCATION DIAGRAM

No Scale

LEGEND

Existing lane signal control lights

Existing deck drains

△ * Indicates location where quantities, dimensions or numbers are changed due to revision

NOTES

1. Exact location of work will be determined in the field
2. For sizes of type "B" cover plates see Sheet No. 57
3. For work on cantilever structure see Sheets No [illegible]

TABULATION OF QUANTITIES △ *

Upper deck panel points: A10W, A9W, A8W, A7W, A6W, A5W, A4W, A3W, A2W, A1W, A0W, C0W, C1W, C2W, C3W, C4W, C5W, C6W, C7W, S0W, S1W, S2W, S3W, S4W, S5W, S6 (each column is the panel between consecutive points).

No.	Bid Item	Unit	A10W–A9W	A9W–A8W	A8W–A7W	A7W–A6W	A6W–A5W	A5W–A4W	A4W–A3W	A3W–A2W	A2W–A1W	A1W–A0W	C0W–C1W	C1W–C2W	C2W–C3W	C3W–C4W	C4W–C5W	C5W–C6W	C6W–C7W	C7W–S0W	S0W–S1W	S1W–S2W	S2W–S3W	S3W–S4W	S4W–S5W	S5W–S6	Total this sheet	Accumulated total
1	Removing concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18.39 *
2	Class L concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191.52 *
3	Bar reinforcing steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87,427 *
4	Structural carbon steel	Lbs	1,362	1,540	4,532	1,540	4,532	1,540	4,787	4,702	4,714	4,708	1,021	1,708	4,713	4,702	4,617	1,540	4,532	1,540	4,532	4,540	4,532	4,540	4,532	4,540	37,534	375,655 *
5	High strength structural steel	Lbs	27,330	27,330	27,330	27,330	27,330	27,330	30,250	30,250	30,250	27,978	27,978	30,250	30,250	30,250	27,330	27,330	27,330	27,330	27,330	27,330	27,330	27,330	27,330	27,330	674,736	4,328,000 *
6	Structural steel T-1	Lbs	1,612	1,690	1,700	1,690	1,700	1,690	1,700	1,690	1,724	1,690	0	1,690	1,724	1,690	1,700	1,690	1,700	1,690	1,700	1,690	1,700	1,690	1,700	1,690	38,940	101,642 *
7	Steel curb alterations	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,269.77 *
8	Adjusting traveler rails	LS																										
9	Altering traveler scaffolds (note)	Ea	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	—	—
10	Cleaning and painting	LS																										
11	Removing steel deck drains	Lbs	2,015	0	0	0	2,015	0	0	0	2,015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,045	12,497 *
12	Installing steel deck drains	Lbs	57	0	0	0	57	0	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171	3,440 *
13	Removing and storing electrical material	Lbs	0	0	0	0	706	0	0	0	0	0	0	0	0	0	0	0	706	0	0	0	0	0	0	0	1,412	4,240 *
14	Relocating upper deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
15	Remounting lower deck luminaires	Ea	1	0	0	1	0	0	1	0	1	0	1	0	1	0	1	0	0	1	0	0	1	0	0	1	10	18

FLOOR STRENGTHENING REQUIREMENTS △ *

	Item	A10W–A9W	A9W–A8W	A8W–A7W	A7W–A6W	A6W–A5W	A5W–A4W	A4W–A3W	A3W–A2W	A2W–A1W	A1W–A0W	C0W–C1W	C1W–C2W	C2W–C3W	C3W–C4W	C4W–C5W	C5W–C6W	C6W–C7W	C7W–S0W	S0W–S1W	S1W–S2W	S2W–S3W	S3W–S4W	S4W–S5W	S5W–S6
Outside stringers	2 Existing stringers (silicon steel)	33CB125	do	do	do	do	do	36CB150	do	do	do	do	do	do	do	33CB125	do	do	do	do	do	do	do	do	do
	2 New understringers (A441 steel) Web	20 x ⅜	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Top flange	8 x ⅜	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Bottom flange	11½ x ⅝	do	do	do	do	do	12 x ⅝	do	do	do	do	do	do	do	11½ x ⅝	do	do	do	do	do	do	do	do	do
	Number of ⅞" connecting bolts	66	66	66	66	66	66	72	72	72	72	72	72	72	72	66	66	66	66	66	66	66	66	66	66
Inside stringers	2 Existing stringers (silicon steel)	33CB125	do	do	do	do	do	36CB150	do	do	do	do	do	do	do	33CB125	do	do	do	do	do	do	do	do	do
	2 New understringers (A441 steel) Web	20 x ⅜	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Top flange	8 x ⅜	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Bottom flange	11½ x ⅞	do	do	do	do	do	12 x 1	do	do	do	do	do	do	do	11½ x ⅞	do	do	do	do	do	do	do	do	do
	Number of ⅞" connecting bolts	72	72	72	72	72	72	76	76	76	76	76	76	76	76	72	72	72	72	72	72	72	72	72	72
	Precamber	⅞"	do	do	do	do	do	1"	do	do	do	do	do	do	do	⅞"	do	do	do	do	do	do	do	do	do
Joists	Additional joists (A440 steel)	10WF29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of joists	8	8	8	8	8	8	9	9	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	8
	Linear feet of joists	464'	464'	464'	464'	464'	464'	522'	522'	522'	522'	522'	522'	522'	522'	464'	464'	464'	464'	464'	464'	464'	464'	463'	464'
	Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 *

Floor beams	A10W	A9W	A8W	A7W	A6W	A5W	A4W	A3W	A2W	A1W	A0W C0W	C1W	C2W	C3W	C4W	C5W	C6W	C7W	S0W	S1W	S2W	S3W	S4W	S5W	S6 see Sheet No 8
Existing web (silicon steel)	27 x ⅜	do	do	do	do	do	do	do	do	do	61 x ⅜	61 x ⅜	do	do	do	do	do	do	do	do	do	do	do	do	
Existing flange angles (silicon steel)	6 x 4 x ⅝	do	do	do	do	do	6 x 4 x ¾	do	do	do	6 x 6 x ⅝	6 x 4 x ⅝	do	do	do	6 x 4 x ¾	do	do	do	do	do	do	do	do	
Existing cover plates (silicon steel)	14 x ⅝	do	do	do	do	do	do	14 x ¾	do	do	—	14 x ⅝	do	do	14 x ¾	do	do	do	do	do	do	do	do	do	
Length	43'-0"	do	do	do	do	do	do	do	do	do	—	43'-0"	do	do	do	do	do	do	do	do	do	do	do	do	
New cover plate (T-1 steel) Type	B	B	B	B	B	B	B	B	B	B	—	B	B	B	B	B	B	B	B	B	B	B	B	B	
Size (note)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	—	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	
Length	50'-2½"	52'-2½"	52'-5⅞"	52'-2½"	52'-5⅞"	52'-2½"	52'-5⅞"	52'-2½"	52'-11⅝"	52'-2⅞"	—	52'-2½"	52'-11⅝"	52'-2½"	52'-5⅞"	52'-2½"	52'-5⅞"	52'-2½"	52'-5⅞"	52'-2½"	52'-5⅞"	52'-2½"	52'-5⅞"	52'-2½"	
Initial prestress - kips	111	284	293	284	293	284	293	259	296	287	—	289	296	289	299	284	293	284	293	284	293	284	293	284	
Number of end connecting bolts																									
East end	14	24	26	24	26	24	26	24	30	26	—	24	30	24	26	24	26	24	26	24	26	24	26	24	
West end	24	30	30	30	30	30	30	30	30	30	—	30	30	30	30	30	30	30	30	30	30	30	30	30	
* Pairs of new shear brackets	2	2	2	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2	2	

Mark	Date	Description	By	Chk
△1	11-1-63	As built with revisions	LLS	EEF

REVISION

SCALE IN INCHES

APPROVAL RECOMMENDED BY [signature] SUPERVISING BRIDGE ENGINEER LICENSE 7187

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN AND DETAILS REVIEWED BY [signatures]

PROJECTS ENGINEER—LICENSE 4478

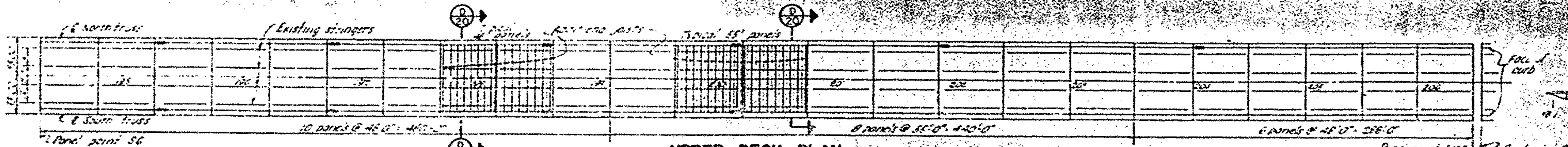
DATE APPROVED October 6, 1961

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

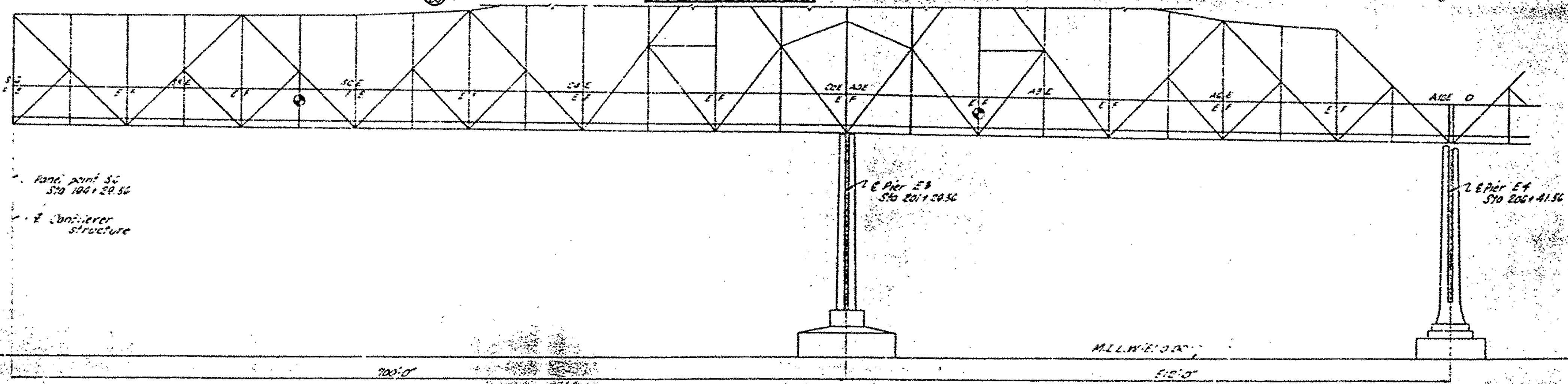
SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
STEEL WORK - EAST BAY

PLAN AND ELEVATION STA. 182+22 TO STA. 194+30

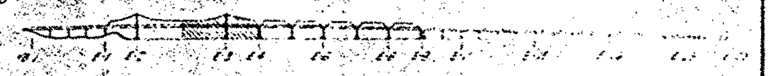
UNLESS NOTED SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 7 | DRAWING C-4030 7R



UPPER DECK PLAN



ELEVATION



LOCATION DIAGRAM

No Scale

LEGEND

- Existing lane signal control lights
- Existing deck drains
- △ * Indicates location where quantities, dimensions or denominations are changed due to revision.

NOTES

1. Exact location of work will be determined in the field
2. For type "B" cover plate sizes see Sheet No 37
3. For work on cantilever structure see Sheets No. 20, 21, 22

PROJECTS ENGINEER — LICENSE 1479

DATE APPROVED October 6, 1961

TABULATION OF QUANTITIES △*

No.	Bid Item	Unit	S6	S5E	S4E	S3E	S2E	S1E	S0E	C7E	C6E	C5E	C4E	C3E	C2E	C1E	C0E A0E	A1E	A2E	A3E	A4E	A5E	A6E	A7E	A8E	A9E	A10E	Total this sheet	Accumulated total	
1	Removing concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	18.59	*
2	Class L concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	191.52	*
3	Bar reinforcing steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	87,427	*
4	Structural carbon steel	Lbs	4518	4540	4518	4540	4518	4540	4518	4540	4618	4540	4618	4498	4714	4688	4620	4688	4714	4688	4765	4540	4618	4540	4618	4540	1688	39,237	412,792	*
5	High strength structural steel	Lbs	27,330	27,330	27,330	27,330	27,330	27,330	27,330	27,330	27,330	27,330	30,250	30,250	30,250	23,978	23,978	30,250	30,250	30,250	27,330	27,330	27,330	27,330	27,330	27,330	—	676,736	2,008,744	*
6	Structural steel (T-1)	Lbs	4700	4690	4700	4690	4700	4690	4700	4690	4700	4690	4700	4490	4726	4690	0	4690	4725	4690	4700	4690	4700	4690	4700	4690	4690	40,720	142,362	*
7	Steel curb alterations	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	—	0	2,269.77	*
8	Adjusting traveler rails	LS																												
9	Altering traveler scaffolds (note)	Ea	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	—			
10	Cleaning and painting	LS																												
11	Removing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	17,697	*
12	Installing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	2,440	*
13	Removing and storing electrical materials	Lbs	0	0	0	0	706	0	0	0	0	0	0	0	0	0	0	706	0	0	0	0	0	0	0	0	—	1412	5,652	*
14	Relocating upper deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	16	
15	Remounting lower deck luminaires	Ea	0	0	1	0	0	1	0	0	1	0	1	0	1	0	1	0	1	0	0	1	0	0	1	0	—	9	27	

FLOOR STRENGTHENING REQUIREMENTS △*

Item	S6	S5E	S4E	S3E	S2E	S1E	S0E	C7E	C6E	C5E	C4E	C3E	C2E	C1E	C0E A0E	A1E	A2E	A3E	A4E	A5E	A6E	A7E	A8E	A9E	
Existing stringers (silicon steel)	33 CB 125	do	do	do	do	do	do	do	do	do	36 CB 150	do	do	do	do	do	do	do	33 CB 125	do	do	do	do	do	
New understringers (A441 steel) web	20 x ⅝	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	
Top flange	8 x ¾	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	
Bottom flange	11½ x ¾	do	do	do	do	do	do	do	do	do	12 x ¾	do	do	do	do	do	do	do	11½ x ¾	do	do	do	do	do	
Number of ⅞ connecting bolts	[illegible]	66	66	66	66	66	66	66	66	66	72	72	72	72	72	72	72	72	66	66	66	66	66	74	*
Existing stringers (silicon steel)	33 CB 125	do	do	do	do	do	do	do	do	do	36 CB 150	do	do	do	do	do	do	do	33 CB 125	do	do	do	do	do	
New understringers A441 steel web	20 x ⅝	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	
Top flange	6 x ¾	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	
Bottom flange	11½ x 1	do	do	do	do	do	do	do	do	do	12 x 1	do	do	do	do	do	do	do	11½ x ¾	do	do	do	do	do	
Number of ⅞ connecting bolts	[illegible]	72	72	72	72	72	72	72	72	72	76	76	76	76	76	76	76	76	72	72	72	72	72	78	
Fill camber	9/16"	do	do	do	do	do	do	do	do	do	¾	do	do	do	do	do	do	do	9/16"	do	do	do	do	do	
Additional joists (A440 steel)	10 W 29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	
Number of joists	8	8	8	8	8	8	8	8	8	8	9	9	9	8	8	9	9	9	8	8	8	8	8	8	
Linear feet of joists	464	465'	465'	465'	464'	468'	[illegible]	465'	465'	465'	525'	522'	522'	464'	465'	522'	522'	522'	463'	465'	464'	465'	464'	464'	
Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*

Item	S6	S5E	S4E	S3E	S2E	S1E	S0E	C7E	C6E	C5E	C4E	C3E	C2E	C1E	C0E A0E	A1E	A2E	A3E	A4E	A5E	A6E	A7E	A8E	A9E	A10E
Existing web (silicon steel)	67 x 5/16	do	do	do	do	do	do	do	do	do	do	do	do	do	(2) 67 x ⅝	67 x 9/16	do	do	do	do	do	do	do	do	do
Existing flange angles (silicon steel)	6 x 4 x ⅝	do	do	do	do	do	do	do	do	do	6 x 4 x ¾	do	do	do	(4) 6 x 6 x ⅝	6 x 4 x ⅝	do	do	do	6 x 4 x ⅝	do	do	do	do	do
Existing cover plates (silicon steel)	14 x ½	do	do	do	do	do	do	do	do	do	do	14 x ¾	do	do	—	14 x ½	do	do	14 x ⅝	do	do	do	do	do	do
Length	41'-0"	do	do	do	do	do	do	do	do	do	do	do	do	do	—	43'-0"	do	do	do	do	do	do	do	do	do
Post-tensioned cover plate (A441 steel) Type	B	B	B	B	B	B	B	B	B	B	B	B	B	B	—	B	B	B	B	B	B	B	B	B	B
Size (note)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	—	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Length	52'-5⅞"	52'-2⅛"	52'-5⅞"	52'-2⅛"	52'-5⅞"	52'-2⅛"	52'-5⅞"	52'-2⅜"	52'-5⅞"	52'-2⅜"	52'-5⅞"	52'-2⅛"	52'-11⅞"	52'-2⅛"	—	52'-2⅛"	52'-11⅞"	52'-2⅛"	52'-5⅞"	52'-2⅛"	52'-5⅞"	52'-2⅛"	52'-5⅞"	52'-2⅛"	52'-2⅛"
Total prestress - kips	293	284	293	284	293	284	293	284	293	265	269	289	286	289	—	290	286	289	290	262	295	284	295	284	262
Number of flange connecting bolts																									
Dead end	26	24	26	24	26	24	26	24	26	24	26	24	30	24	—	24	30	24	24	24	26	24	26	24	24
Stressing end	30	30	30	30	30	30	30	30	30	30	30	30	30	20	—	30	30	30	30	30	30	30	30	30	30
Number of ... brackets	2	2	2	2	2	2	2	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2

APPROVAL RECOMMENDED BY

Mark	Date	Description	By	Chk
△1	8-1-63	As built with revisions	J.J.S.	EEF

REVISION

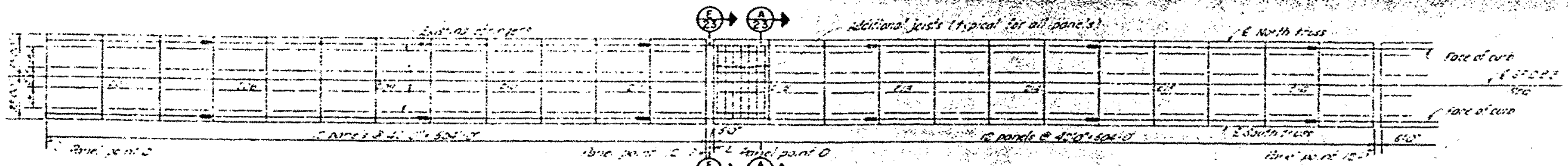
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

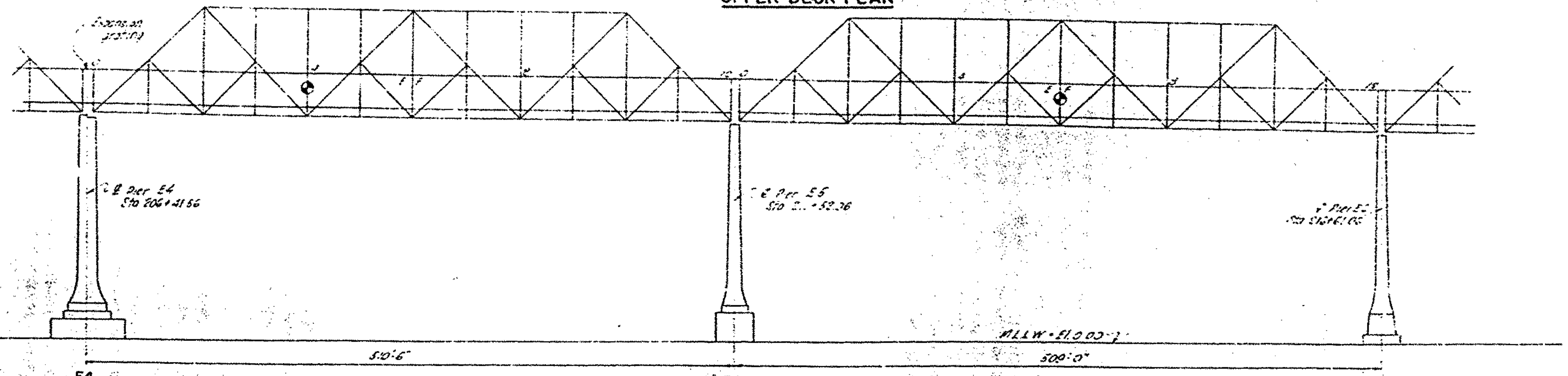
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

PLAN AND ELEVATION STA. 194+30 TO STA. 206+46

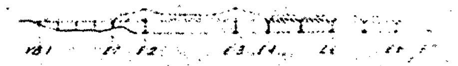
UNLESS NOTED SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 8 | DRAWING C 4030-89



UPPER DECK PLAN



ELEVATION



LOCATION DIAGRAM

No Scale

LEGEND

- Existing lane signal control light
- Existing deck drains
- △ * Indicates location where quantities or denominations are changed

NOTES

1. Exact location of work will be determined in the field
2. For type of cover plate sizes, see Sheet No. 57
3. For work on E-F spans, see Sheets No. 23, 24.

TABULATION OF QUANTITIES △*

No.	UPPER DECK PANEL POINT / BID ITEM	UNIT	0	1	2	3	4	5	6	7	8	9	10	11	12, 0	1	2	3	4	5	6	7	8	9	10	11	12	Total this sheet	Accumulated total	
1	Removing concrete	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	18.39	*
2	Class L concrete	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	191.52	*
3	Bar reinforcing steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	83,427	*
4	Structural carbon steel	Lbs	4275	1954	1954	1443	1954	1954	1699	1443	1954	1954	1954	3912	3231	1954	1954	1443	1954	1954	1699	1443	1954	1954	1954	3,912	—	48,854	461,646	*
5	High strength structural steel	Lbs	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	—	585,900	2,599,444	*
6	Structural steel, T-1	Lbs	4608	4728	4732	4728	4732	4728	4723	4728	4732	4728	4732	4728	[illegible]	4728	4732	4728	4732	4728	4723	4728	4732	4728	4732	4728	4608	44,470	106,832	*
7	Steel curb alterations	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	8,269.77	*
8	Adjusting traveler rails	L.S.																												
9	Altering traveler scaffolds (more)	Ea.	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	—	—	—	
10	Cleaning and painting	L.S.																												
11	Removing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	17,497	*
12	Installing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	7,440	*
13	Removing and storing electrical materials	Lbs	0	0	0	906	0	0	0	0	0	0	0	0	0	0	0	0	0	906	0	0	0	0	0	0	—	1,812	7,064	*
14	Relocating upper-deck luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	16	
15	Remounting lower deck luminaires	Ea.	0	1	0	0	1	0	0	[illegible]	0	[illegible]	1	0	0	1	0	0	1	0	0	1	0	[illegible]	[illegible]	0	—	6	35	

FLOOR STRENGTHENING REQUIREMENTS △*

Outside stringers	Existing stringer-North (silicon steel)	30 Ι 126	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Existing stringer-South (silicon steel)	30 Ι 126	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	New understringer-North (A440 steel)	21 W 73	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞ connecting bolts	62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	New understringer-South (A440 steel)	21 W 73	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞ connecting bolts	62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Inside stringers	Existing stringers (silicon steel)	30 Ι 126	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	New understringers (A440 steel)	21 W 73	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞ connecting bolts	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Joists	Additional joists (A440 steel)	10 W 29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of joists	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	Linear feet of joists	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	406	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	0	1	2	3	4	5	6	7	8	9	10	11	12, 0	1	2	3	4	5	6	7	8	9	10	11	12
Existing web (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing flange angles (silicon steel)	6×4×¾	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing cover plates (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Length	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
New cover plate (T-1 steel) Type	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Size (note)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Length	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total erection bolts	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	262	[illegible]	[illegible]	[illegible]	262	274	[illegible]	[illegible]	[illegible]	[illegible]	262	[illegible]
Number of field connection bolts																									
First end	[illegible]	24	24	[illegible]	[illegible]	[illegible]	24	24	[illegible]	[illegible]	24	24	[illegible]	24	24	24	24	24	24	24	24	[illegible]	[illegible]	[illegible]	[illegible]
Second end	[illegible]	26	26	[illegible]	[illegible]	[illegible]	30	26	[illegible]	26	26	26	[illegible]	26	26	26	26	28	30	[illegible]	26	[illegible]	[illegible]	26	[illegible]
*Pairs of new [illegible] brackets	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

APPROVAL RECOMMENDED BY: W. J. Rickey, Supervising Bridge Engineer, License 7187

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN AND DETAILS REVIEWED BY

MARK	DATE	DESCRIPTION	BY	CH'K
△1	11-1-63	As built with revisions	[illegible]	[illegible]
		REVISION		

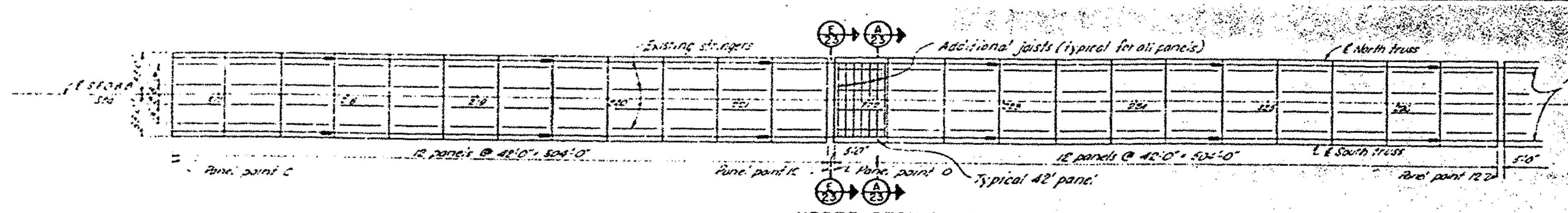
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION
STEEL WORK - EAST BAY

PLAN AND ELEVATION STA 206+41.56 TO STA [illegible]

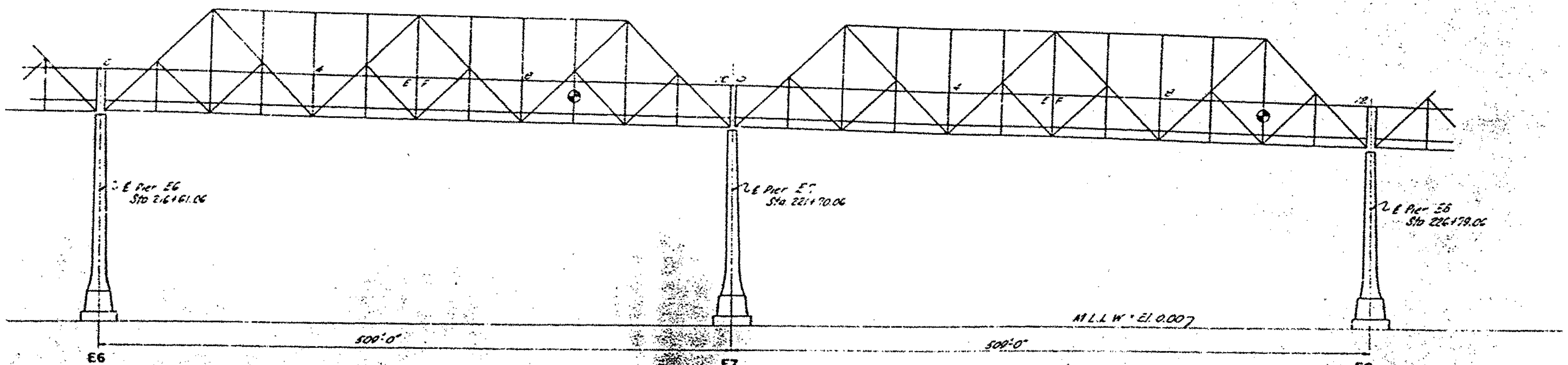
UNLESS NOTED SCALE 1" = 50'

BRIDGE [illegible] [illegible] 64030-9[illegible]

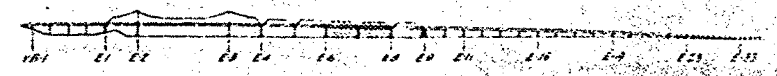
PROJECTS ENGINEER—LICENSE 1478
DATE APPROVED October 6, 1961



UPPER DECK PLAN



ELEVATION



LOCATION DIAGRAM

No Scale

LEGEND

- Existing lane signal control lights
- Existing deck drains.
- △1 * Indicates location where quantities, dimensions or denominations are changed due to revision.

NOTES

1. Exact location of work will be determined in the field.
2. See Sheet No. 37 for type "B" cover plate sizes.
3. For work on 504' spans, see sheets No. 23, 24.

TABULATION OF QUANTITIES △1*

No.	UPPER DECK PANEL POINT / BID ITEM	UNIT	0	1	2	3	4	5	6	7	8	9	10	11	12-0	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL THIS SHEET	ACCUMULATED TOTAL	
1	Removing concrete	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	18.39	*
2	Class L-concrete	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	191.52	*
3	Bar reinforcing steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	83,427	*
4	Structural carbon steel	Lbs	3231	4954	4954	4443	4954	4954	4499	4443	1954	4954	4954	3,912	3,231	1,954	4956	1,443	4954	1954	4499	4443	4954	4956	4956	3,912	—	60,812	412,458	*
5	High strength structural steel	Lbs	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	24,413	—	585,900	3,174,544	*
6	Structural steel T-1	Lbs	4608	4728	4732	4728	4732	4728	4723	4728	4732	4728	4732	4728	5,216	4728	4732	4728	4732	4,728	4723	4728	4732	4728	4732	1,728	1608	44,470	281,302	*
7	Steel curb alterations	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	2,369.77	*
8	Adjusting traveler rails	L.S.																												
9	Altering traveler scaffolds (note)	Ea.	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)		—	—	
10	Cleaning and painting	L.S.																												
11	Removing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	17,697	*
12	Installing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	3,440	*
13	Removing and storing electrical pullboxes	Lbs	0	0	0	0	0	0	0	0	706	0	0	0	0	0	0	0	0	0	0	0	0	706	0	0		1412	8,476	*
14	Relocating underdeck luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	16	
15	Remounting lower-deck luminaires	Ea.	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0		8	43	

FLOOR STRENGTHENING REQUIREMENTS

Item	0	1	2	3	4	5	6	7	8	9	10	11	12-0	1	2	3	4	5	6	7	8	9	10	11
1 Existing stringer-North (silicon steel)	36 B 108	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing stringer-South (silicon steel)	36 B 108	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
1 New understringer-North (A440 steel)	21W 72	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of 7/8 connecting bolts	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
1 New understringer-South (A440 steel)	21W 73	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of 7/8 connecting bolts	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
2 Existing stringers (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
2 New understringers (A440 steel)	21W 73	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of 7/8 connecting bolts	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
Additional joists (A440 steel)	10W 29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of joists	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Linear feet of joists	[illegible]	[illegible]	[illegible]	436'	[illegible]	406'	436'	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	406'	[illegible]	406'	400'	[illegible]	[illegible]	[illegible]
Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

△1

Item	0	1	2	3	4	5	6	7	8	9	10	11	12-0	1	2	3	4	5	6	7	8	9	10	11	12
Existing web (silicon steel)	61 x 7/16	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing flange angles (silicon steel)	6 x 6 x 7/16	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing cover plates (silicon steel)	14 x 1/2	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Length	40'0"	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
New cover plate (T-1 steel) Type	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Size (note)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Length	50'8 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	54'11 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	50'8 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	54'11 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	54'1 3/4"	53'11 3/4"	50'8 3/4"
Initial prestress kips	111	262	262	262	262	262	274	262	262	262	262	262	111	262	262	262	262	262	274	262	262	262	262	262	111
Number of 7/8 connecting bolts																									
Each end	14	24	24	24	24	24	24	24	24	24	24	24	14	24	24	24	24	24	24	24	24	24	24	24	14
Intermediate	20	22	22	28	28	28	30	28	28	28	28	28	[illegible]	28	26	28	26	28	30	28	26	28	28	28	20
Pairs of new shear brackets	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

△1

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
△1	11-63	As built with revisions	L.L.S.	E.E.F.
		REVISION		

APPROVAL RECOMMENDED BY [signature] SUPERVISING BRIDGE ENGINEER LICENSE

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN AND DETAILS REVIEWED BY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

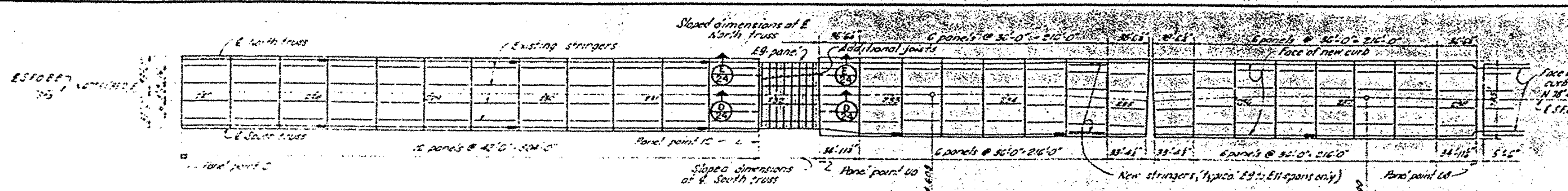
SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
STEEL WORK - EAST BAY

PLAN AND ELEVATION STA.216+61 TO STA. 226+79

UNLESS NOTED SCALE 1"=50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No 10 | DRAWING C 4030-10R

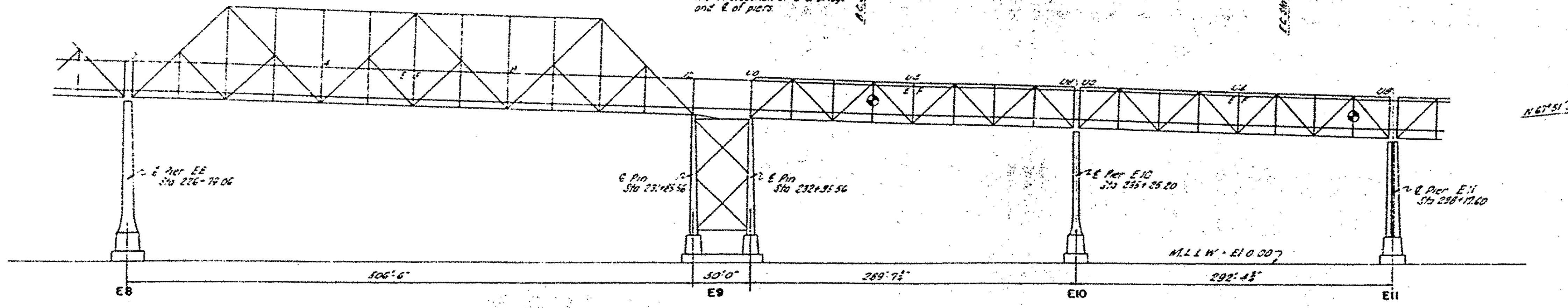
PROJECTS ENGINEER — LICENSE

DATE APPROVED October 6, 1961

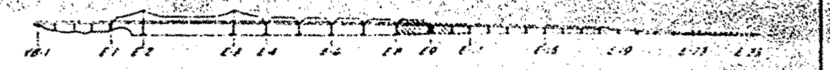


UPPER DECK PLAN

Note: Curve sections rotated about the intersection of ℄ of bridge and ℄ of piers.

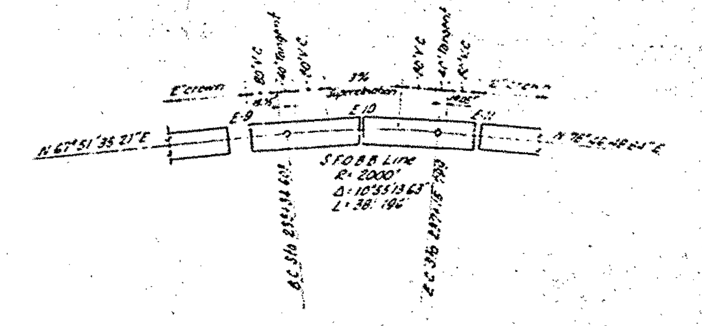


ELEVATION



LOCATION DIAGRAM

No Scale



SPAN LAYOUT PIERS E9 THRU E11

Scale 1" = 200'

TABULATION OF QUANTITIES ⚠2*

No	UPPER DECK PANEL POINT / BID ITEM	UNIT	0	1	2	3	4	5	6	7	8	9	10	11	12	U0	U1	U2	U3	U4	U5	U6	U7	U8/U0	U1	U2	U3	U4	U5	U6	U7	U8	TOTAL THIS SHEET	ACCUMULATED TOTAL
1	Removing concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	4.22	0.27	0.27	0.28	0.41	0.41	0.60	0.64	0.44	0.59	0.59	0.58	0.59	0.58	0.58	0.58	—	8.83	26.62 *
2	Class L concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	1.41	3.34	3.87	4.26	4.88	5.06	5.01	5.53	5.48	5.02	5.04	5.05	5.05	5.04	5.04	5.00	—	74.06	265.58 *
3	Bar reinforcing steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	4,178	4,466	4,538	4,595	2,258	2,306	2,301	2,346	2,347	2,312	2,317	2,321	2,308	2,308	2,308	2,290	—	33,495	120,922 *
4	Structural carbon steel	Lbs	3,231	4,954	4,954	4,463	4,954	4,954	4,499	4,448	4,958	4,954	4,954	4,614	4,103	5,614	5,529	5,785	6,210	10,125	10,125	9,871	13,701	15,361	9,871	10,211	10,124	10,124	9,871	9,871	10,041	—	174,649	683,107 *
5	High strength structural steel	Lbs	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	24,412	23,620	19,497	20,137	20,276	20,386	20,446	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,446	—	648,792	3,823,336 *
6	Structural steel, T-1	Lbs	4,408	4,728	4,732	4,728	4,732	4,728	4,723	4,728	4,732	4,728	4,732	4,728	4,723	1,802	4,484	4,445	4,479	4,445	4,492	4,472	4,480	4,528	4,479	4,471	4,483	4,476	4,579	4,474	1,484	1,190	47,605	276,807 *
7	Steel curb alterations	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	30.18	36.02	35.99	35.95	77.06	72.03	72.02	76.02	75.87	71.48	72.01	71.98	72.09	72.01	72.01	75.79	—	1,014.01	3,283.78 *
8	Adjusting traveler rails	LS																																
9	Altering traveler scaffolds (note)	Ea	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	—	—	—
10	Cleaning and painting	LS																																
11	Removing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	699	0	0	0	704	0	0	678	0	0	712	0	0	0	0	—	2,793	20,490 *
12	Installing steel deck drains	Lbs	0	0	0	0	[illegible]	0	0	0	0	0	0	0	0	0	699	0	0	0	693	0	0	667	0	0	694	0	0	0	0	—	2,753	10,193 *
13	Removing and storing electrical materials	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	706	0	0	0	0	0	0	0	0	0	0	0	706	0	—	1,412	9,888 *
14	Relocating upper-deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	—	8	24
15	Remounting lower-deck luminaires	Ea	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	4	47

FLOOR STRENGTHENING REQUIREMENTS ⚠2*

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	U0	U1	U2	U3	U4	U5	U6	U7	U8/U0	U1	U2	U3	U4	U5	U6	U7
1 Existing stringer - North (silicon steel)	30 B108	do	do	do	do	do	do	do	do	do	do	do	33 B182	27 B98	do	do	do	do	do	do	27 B100	do	27 B98	do	do	do	do	do	do
1 Existing stringer - South (silicon steel)	30 B108	do	do	do	do	do	do	do	do	do	do	do	33 B182	27 B98	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
1 New understringer - North (A440 steel)	21WF73	do	do	do	do	do	do	do	do	do	do	do	See note 6	16WF58	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of ⅞" connecting bolts	62	62	62	62	62	62	62	62	62	62	62	62	46	50	50	50	50	50	50	50	52	52	50	50	50	50	50	50	50
1 New understringer - South (A440 steel)	21WF73	do	do	do	do	do	do	do	do	do	do	do	See note 6	16WF58	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of ⅞" connecting bolts	62	62	62	62	62	62	62	62	62	62	62	62	46	48*	50	50	50	50	50	50	50*	50*	50	50	50	50	50	50	50
1 New stringer - North														—	—	—	—	30WF108	do	do	30WF124	do	30WF108	do	do	do	do	do	do
1 New stringer - South														30WF108	do	30WF116	do	do	30WF108	do	do	do	do	30WF116	do	do	30WF108	do	do
2 Existing stringers (silicon steel)	30 B116	do	do	do	do	do	do	do	do	do	do	do	33 B132	27 B98	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
2 New understringers (A440 steel)	21WF73	do	do	do	do	do	do	do	do	do	do	do	See note 6	21WF68	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of ⅞" connecting bolts	66	66	66	66	66	66	66	66	66	66	66	66	74	56*	58	58	58	58	58	58	[illegible],58*	60,58*	58	58	58	58	58	58	58
Additional joists (A440 steel)	10WF29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of joists	7	7	7	7	7	7	7	7	7	7	7	7	8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Linear feet of joists	406'	406'	406'	406'	406'	406'	406'	406'	406'	406'	406'	406'	464'	362.58'	375.5'	380.5'	383.17'	386.17'	387.5'	387.5'	387.5'	387.5'	387.5'	387.5'	387.5'	387.5'	387.5'	387.5'	387.5' *
Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 *
Extensions of existing joists (carbon steel)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	[illegible]	—	—	—	—	—	—	—	12I31.8	—	—	—	—
Linear feet of joist extensions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.96'*	—	—	—	—	—	—	—	5.95'*	—	—	—	—
Number of splices	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—

Floor beams	0	1	2	3	4	5	6	7	8	9	10	11	12	U0	U1	U2	U3	U4	U5	U6	U7	U8/U0	U1	U2	U3	U4	U5	U6	U7	U8
Existing web (silicon steel)	61x½	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing flange angles (silicon steel)	6x4x¾	do	do	do	do	do	do	do	do	do	do	do	6x4x⅝	6x4x¾	6x6x¾	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing cover plates (silicon steel)	14x½	do	do	do	do	do	do	do	do	do	do	do	14x⅝	do	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Length	40-3	do	do	do	do	do	do	do	do	do	do	do	43'-0"	44'-11⅝"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New cover plate (T-1 steel) Type	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	A
Size (note)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12"x¾"	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12"x¾"
Length	50'-8¾"	53'-11⅝"	54'-1¾"	53'-11⅝"	53'-1¾"	53'-11⅝"	54'-1⅝"	53'-11⅝"	53'-1¾"	53'-11⅝"	54'-1¾"	53'-11⅝"	53'-11⅝"	55'-9"	45'-11"	45'-8"	45'-9"	45'-8"	45'-10"	45'-6½"	45'-6½"	[illegible]	45'-9"	45'-6"	45'-10"	45'-8"	45'-9"	46'-8"	45'-11"	42'-6"
Initial prestress kips	111	262	262	262	262	262	274	262	262	262	262	262	285	310	260	260	260	275	260	260	260	144	260	260	260	260	260	260	260	187
Number of end connecting bolts																														
Fixed end	24	24	24	24	24	24	24	24	24	24	24	24	24	30	26	26	26	26	26	26	26	20	26	26	26	26	26	26	26	26
Stressing end	20	28	28	28	28	28	30	28	28	28	28	28	30	32	30	30	24	30	28	30	30	24	30	30	28	30	28	30	30	28
* Rows of new shear brackets	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2

LEGEND

◐ Existing lane signal control lights

— Existing deck drains (on spans E6-E9) and relocated deck drains (on spans E9-E11)

⚠2* Indicates location where quantities, dimensions or denominations are changed due to revision.

NOTES

1. Exact location of work will be determined in the field
2. For type "B" cover plate sizes see Sheet No 87
3. For work on 504' span see Sheets No 23, 24
4. For Deck Framing Plan of spans E9-E11 see Sheet No 25
5. ⚠1 For deck widening, curb alterations and slab details on E9-E11 Spans see Sheets No 27, 28, 31 and 32
6. ⚠1 For size of understringers (A441 Steel) see Sheet No 24

SCALE IN INCHES (0–4; 8 THS, 10 THS)

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN AND DETAILS REVIEWED BY

SUPPLEMENTAL CONTRACT DRAWING

MARK	DATE	DESCRIPTION REVISION	BY	CHK
⚠2	11.1.63	As built with revisions	L.L.S.	EEF
⚠1	1.11.62	Notes 5 and 6 added	EEF	AL

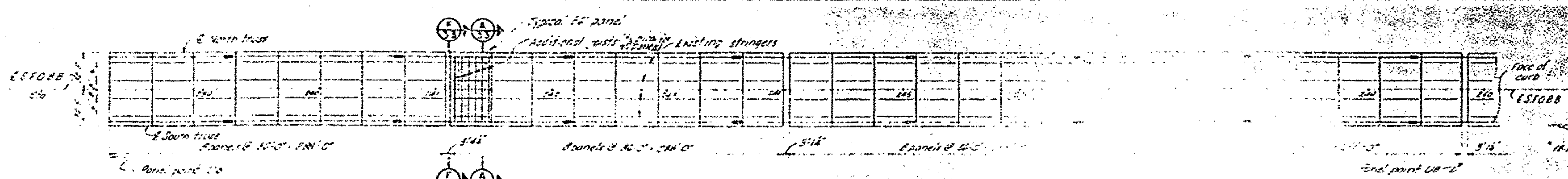
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
STEEL WORK - EAST BAY
PLAN AND ELEVATION STA. 226+79 TO STA. 238+18

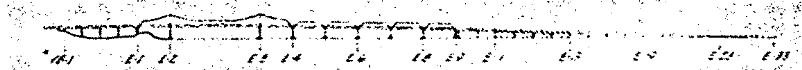
UNLESS NOTED SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No 11 | DRAWING C 4030 11R

PROJECTS ENGINEER — LICENSE 1478

DATE APPROVED October 6, 1961



UPPER DECK PLAN



LOCATION DIAGRAM

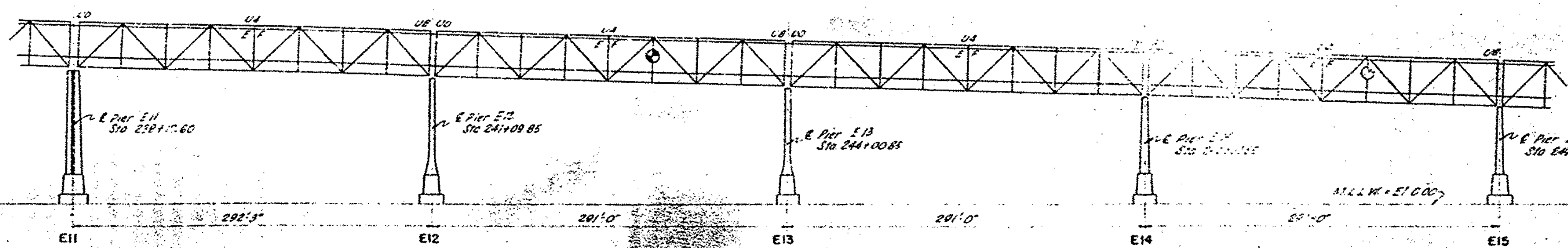
No Scale

LEGEND

Existing lane signal control lights

Existing deck drains

* Indicates location where quantities, dimensions or denominations are changed due to revision.



ELEVATION

NOTES

1. Exact location of work will be determined in the field.
2. For work on 288' spans, see Sheets No. 33, 34.

TABULATION OF QUANTITIES ⚠*

NO	UPPER DECK PANEL POINT / BID ITEM	UNIT	U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7
1	Removing concrete	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Class L concrete	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Bar reinforcing steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Structural carbon steel	Lbs	1,147	1,220	1,220	1,347	1,220	1,220	1,220	3,352	1,220	1,220	1,220	1,347	1,220	1,220	1,220	3,352
5	High strength structural steel	Lbs	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506
6	Structural steel, T-1	Lbs	733	1,176	1,176	1,176	1,259	1,176	1,176	1,176	1,484	1,176	1,176	1,176	1,259	1,176	1,176	1,176
7	Steel curb alterations	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Adjusting traveler rails	L.S.																
9	Altering traveler scaffolds etc.	Ea.	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
10	Cleaning and painting	L.S.																
11	Removing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Installing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Removing and storing electrical materials	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	706	0	0	0
14	Relocating upper-deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Remounting lower-deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NO	UPPER DECK PANEL POINT / BID ITEM	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8	TOTAL THIS SHEET	ACCUMULATED TOTAL	
1	Removing concrete	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	26.62	*
2	Class L concrete	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	265.58	*
3	Bar reinforcing steel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,922	*
4	Structural carbon steel	1,220	1,220	1,220	1,347	1,220	1,220	1,220	3,352	1,220	1,225	[illegible]	1,347	1,220	1,220	1,220	3,352		42,003	735,110	*
5	High strength structural steel	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,5[illegible]	[illegible]	19,506	19,506	19,506	19,506	19,506		624,192	4,447,538	*
6	Structural steel, T-1	1,484	1,176	1,176	1,176	1,259	1,176	1,176	1,176	1,484	[illegible]	[illegible]	1,176	1,259	1,176	1,176	1,176	733	39,178	317,985	*
7	Steel curb alterations	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	3,283.76	*
8	Adjusting traveler rails																				
9	Altering traveler scaffolds etc.	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	[illegible]	[illegible]	(1)	(1)	(1)	(1)	(1)			
10	Cleaning and painting																				
11	Removing steel deck drains	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0		0	20,690	*
12	Installing steel deck drains	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0		0	10,193	*
13	Removing and storing electrical materials	0	0	0	0	0	0	0	0	0	0	[illegible]	0	706	0	0	0	0	1,412	11,300	*
14	Relocating upper-deck luminaires	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	22	
15	Remounting lower-deck luminaires	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	47	

FLOOR STRENGTHENING REQUIREMENTS ⚠*

		U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7
Outside stringer panels	2 Existing stringers (silicon steel)	27 WF 98	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	2 New understringers (A440 steel)	16 WF 58	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞" connecting bolts	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Inside stringer panels	2 Existing stringers (silicon steel)	27 WF 98	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	2 New understringers (A440 steel)	8 WF 62	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of ⅞" connecting bolts	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Joists	Additional joists (A440 steel)	10 WF 29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Number of joists	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Linear feet of joists	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	348'	348'	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	
Outside stringer panels	2 Existing stringers (silicon steel)	do	do	do	do	do	do	do	do	do	do			do	do	do	do	
	2 New understringers (A440 steel)	do	do	do	do	do	do	do	do	do	[illegible]			do	do	do	do	
	Number of ⅞" connecting bolts	50	50	50	50	50	50	50	50	50				50	50	50	50	
Inside stringer panels	2 Existing stringers (silicon steel)	do	do	do	do	do	do	do	do	do				do	do	do	do	
	2 New understringers (A440 steel)	do	do	do	do	do	do	do	do	do				do	do	do	do	
	Number of ⅞" connecting bolts	58	58	58	58	58	58	58	58	[illegible]				58	58	58	58	
Joists	Additional joists (A440 steel)	do	do	do	do	do	do	do	do	do				do	do	do	do	
	Number of joists	6	6	6	6	6	6	6	6					[illegible]	6	6	6	
	Linear feet of joists	[illegible]	[illegible]	[illegible]	[illegible]	348'	348'	[illegible]	[illegible]					[illegible]	[illegible]	348'	348'	
	Number of splices	0	0	0	0	0	0	0	0						0	0	0	*

		U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8
Floor beams	Existing web (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Existing flange angles (silicon steel)	6x4x⅝	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
	Existing cover plate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	New cover plate (T-1 steel) Type	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Size	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Length	36'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	[illegible]	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	[illegible]	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	36'-0"
	Initial prestress-kips	77	207	207	207	207	207	207	207	[illegible]	207	207	207	207	207	207	207	[illegible]	207	207	207	207	207	207	207	77
	Number of ⅞" connecting bolts																									
	Fixed end	4	[illegible]	26	[illegible]	28	[illegible]	[illegible]	[illegible]	14 16	[illegible]	26	[illegible]	26	26	[illegible]	[illegible]	14 16	26	[illegible]	26	[illegible]	[illegible]	26	[illegible]	14
	Jacking end	20	32	32	32	32	32	[illegible]	[illegible]	[illegible]	[illegible]	32	[illegible]	32	[illegible]	[illegible]	[illegible]	[illegible]	32	[illegible]	32	[illegible]	[illegible]	32	[illegible]	20
	*Pairs of new heat treated	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

MARK	DATE	DESCRIPTION	BY	CH'K
⚠1	11.1.63	As built with revisions	OB	EEF
REVISION				

8 THS — 10 THS
0 1 2 3 4
SCALE IN INCHES

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER LICENSE 7110

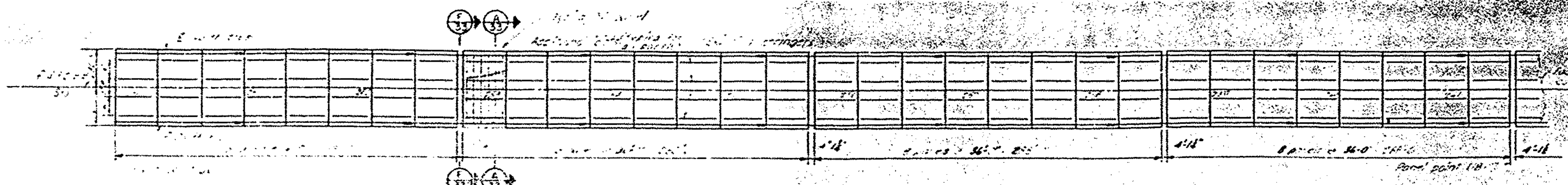
DESIGN — DETAILS — QUANTITIES — TRACED — DESIGN AND DETAILS REVIEWED BY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

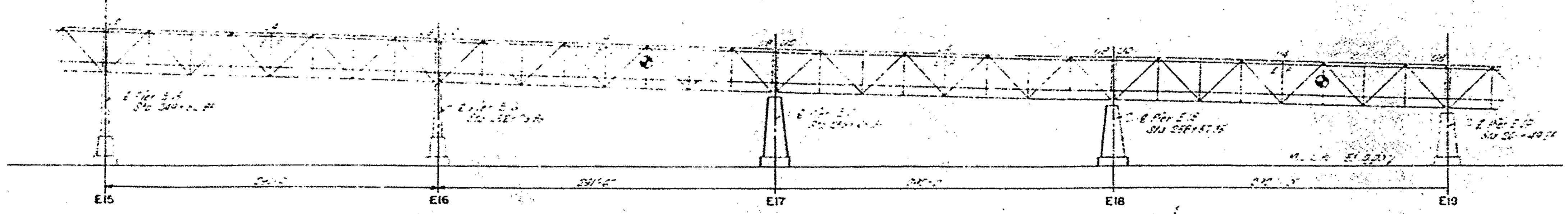
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

PLAN AND ELEVATION STA. 238+18 TO STA. 249+63

UNLESS NOTED SCALE 1" = 50'	BRIDGE 33-25, 34-01, 34-04	SHEET NO 12	DRAWING C-4030-12R



UPPER DECK PLAN



ELEVATION

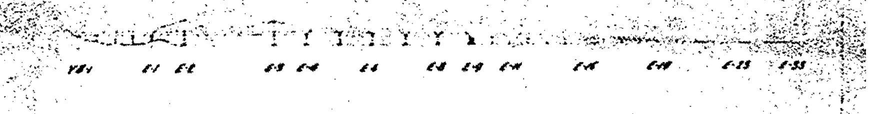
TABULATION OF QUANTITIES ⚠*

Upper deck panel point	Unit	U0	U1	U2	U3	U4	U5	U6	U7	U8 L0	U1	U2	U3½	U4	U5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	U3	U4	U5	U6	U7	U8	Total quantity	Accumulated total	
1 Removing concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	26.62	*
2 Class L concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	265.58	*
3 Bar reinforcing steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	120,922	*
4 Structural carbon steel	Lbs	4220	4220	4220	4347	4220	4220	4220	5352	4220	4220	4220	4347	4220	4220	4220	5352	5081	4220	4220	4347	4220	4220	4220	3357	3081	4220	4220	4347	4220	4220	4220	3852		51,798	786,408	*
5 High strength structural steel	Lbs	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506		624,192	5,011,720	*
6 Structural steel	Lbs	755	4176	4176	4176	4259	4176	4176	4176	4454	4176	4176	4176	4259	4176	4176	4176	4506	4176	4176	4176	4259	4176	4176	4176	4506	4176	4176	4176	4259	4176	4176	4176	755	39,266	357,251	*
7 Steel curb alterations	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	3283.78	*
8 Adjusting traveler rails	LS																																				
9 Altering traveler scaffolds	Ea	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)				
10 Cleaning and painting	LS																																				
11 Removing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,690	*
12 Installing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,193	*
13 Removing and storing electrical conduit	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	708	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	708	0	0	0	0	1416	12,716	*
14 Relocating upper deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
15 Remounting overhead luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	

FLOOR STRENGTHENING REQUIREMENTS ⚠*

Existing stringers (silicon steel)	27 WF 84	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
New under stringers (A440 steel)	24 WF [illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of ⅞ connecting bolts	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	60	52	52	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	50	50	50	50	50	50	[illegible]
Existing stringers (silicon steel)	27 WF 84	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
New under stringers (A440 steel)	24 WF 76	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of ⅞ connecting bolts	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52	52	52	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Reinforcing [illegible] (A7 steel)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	do	do	do	[illegible]	do	do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Number [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6	6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6	6	6	[illegible]	[illegible]	[illegible]	[illegible]
Length [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	348'	348'	[illegible]	348'	348'	do	348	[illegible]	348'	[illegible]	[illegible]	348	348'	[illegible]	348'	348	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	348'
Number of splices	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 *

	U3	[illegible]	[illegible]	[illegible]	U7	[illegible]	U1	[illegible]	[illegible]	U4	U5	U6	U7	[illegible]	[illegible]	[illegible]	[illegible]	U4	[illegible]	U6	U7	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	do	[illegible]	[illegible]	do do	do do	do do	do	[illegible]	[illegible]	[illegible]	[illegible]	do	do	do	[illegible]	[illegible]
[illegible]	[illegible]	4'-0"	[illegible]	[illegible]	340'-0"	42'-0"	A 12×	[illegible]	[illegible]	A 12×⅝ 45'-0" 227	A 12×⅝ 42'-0" 207	A 12×⅝ 42'-0" 207	A 12×⅝ 42'-0" 207	12×⅝ 37'-0"	12× 42'-0"	[illegible]	[illegible]	45'-0" 227	42'-0" 207	12× 42'-0"	12× 42'-0"	[illegible]
[illegible]	12	[illegible]	[illegible]	[illegible]	71, 87	[illegible]	[illegible]	26 32 2	26 32 2	26 32 2	26 32 2	26 32 2	26 32 2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	16



LOCATION DIAGRAM

LEGEND

◐ Existing [illegible]

— Existing deck drains.

⚠ * Indicates location where quantities, dimensions or denominations are changed due to revision.

NOTES

[illegible]

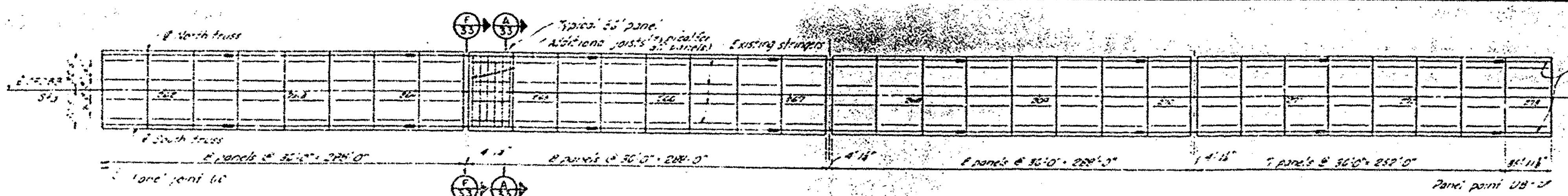
⚠	2-1-63	As built with revisions	L.L.S.	EEF
MARK	DATE	DESCRIPTION	BY	CHK
REVISION				

SCALE IN INCHES

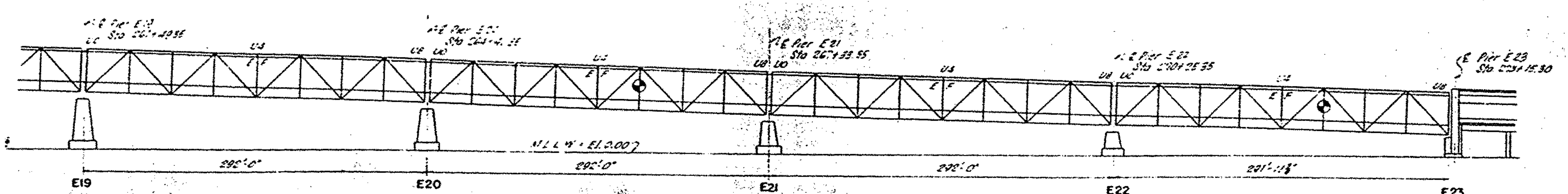
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

PLAN AND ELEVATION STA.249+83 TO STA.261+49

13



UPPER DECK PLAN



ELEVATION

TABULATION OF QUANTITIES △*

No.	Bid item (Upper deck panel point)	Unit	U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8	Total this sheet	Accumulated total	
1	Removing concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	26.62	*
2	Class L concrete	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	265.58	*
3	Bar reinforcing steel	Lbs	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	180,982	*
4	Structural carbon steel	Lbs	3,081	4,820	4,820	4,347	4,820	4,820	4,820	3,352	3,081	4,820	4,820	4,347	4,820	4,820	4,820	3,352	3,081	4,820	4,820	4,347	4,820	4,820	4,820	3,352	3,081	4,820	4,820	4,347	4,820	4,820	4,820	1,504	—	53,472	840,580	*
5	High strength structural steel	Lbs	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	19,506	21,504	21,504	21,504	21,504	21,506	—	634,184	5,705,904	*
6	Structural steel, F-1	Lbs	753	4,176	4,176	4,176	4,259	4,176	4,176	4,176	4,504	4,176	4,176	4,176	4,259	4,176	4,176	4,176	4,504	4,176	4,176	4,176	4,259	4,176	4,176	4,176	4,504	4,176	4,176	4,176	4,259	4,176	4,176	4,176	753	98,278	846,520	*
7	Steel curb alterations	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	5,283.78	*
8	Adjusting traveler rails	L.S.																																				
9	Altering traveler scaffolds (sets)	Ea	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	—	—	—	
10	Cleaning and painting	L.S.																																				
11	Removing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	20,490	*
12	Installing steel deck drains	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	10,193	*
13	Removing and storing overhead [illegible]	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	708	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	708	0	0	0	—	1,416	14,132	*
14	Relocating upper deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	24	
15	Remounting lower-deck luminaires	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	27	

FLOOR STRENGTHENING REQUIREMENTS △ *

Item	U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8
2 Existing stringers (silicon steel)	27CB38	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
2 New understringers (A440 steel)	16W64	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of ⅞ connecting bolts	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
2 Existing stringers (silicon steel)	27CB38	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
2 New understringers (A440 steel)	21W68	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of ⅞ connecting bolts	56	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Additional joists (A440 steel)	12W29	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Number of joists	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Linear feet of joists	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'	348'
Number of splices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*

Item	U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8 U0	U1	U2	U3	U4	U5	U6	U7	U8
Existing web (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing flange angles (silicon steel)	[illegible]	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do	do
Existing cover plate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New cover plate (F-1 steel) Type	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Size	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Length	35'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	37'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	48'-0"	37'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	37'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	45'-0"	37'-0"
Initial prestress - kips	67	207	207	207	227	207	207	207	67	207	207	207	227	207	207	207	67	207	207	207	227	207	207	207	67	207	207	207	227	207	207	207	114
Number of end connecting bolts																																	
Fixed end	16	26	26	26	28	26	26	26	16	26	26	26	28	26	26	26	16	26	26	26	28	26	26	26	16	26	26	26	28	26	26	26	18
Stressing end	22	32	32	32	32	32	32	32	22	32	32	32	32	32	32	32	22	32	32	32	32	32	32	32	22	32	32	32	32	32	32	32	34
* [illegible]	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2

PROJECTS ENGINEER — LICENSE 1478
DATE APPROVED October 6, 1961

LOCATION DIAGRAM

No Scale

LEGEND

● Existing lane signal control lights

— Existing deck drains

△* Indicates location where quantities, dimensions or denominations are changed due to revision.

NOTES

1. Exact location of work will be determined in the field
2. For work on 288' spans, see Sheets No. 33, 34

MARK	DATE	DESCRIPTION	BY	CH'K
△1	8-1-63	As built with revisions	LLS	EEF

REVISION

SCALE IN INCHES

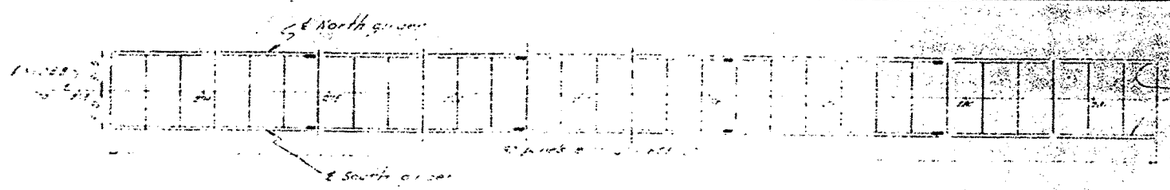
APPROVAL RECOMMENDED BY
DESIGN AND DETAILS REVIEWED BY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

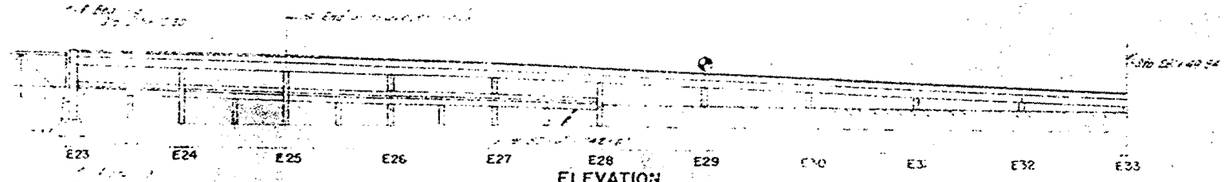
SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK - EAST BAY

PLAN AND ELEVATION STA. 261+49 TO STA. 273+15

UNLESS NOTED SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 14 | DRAWING C-4030-145

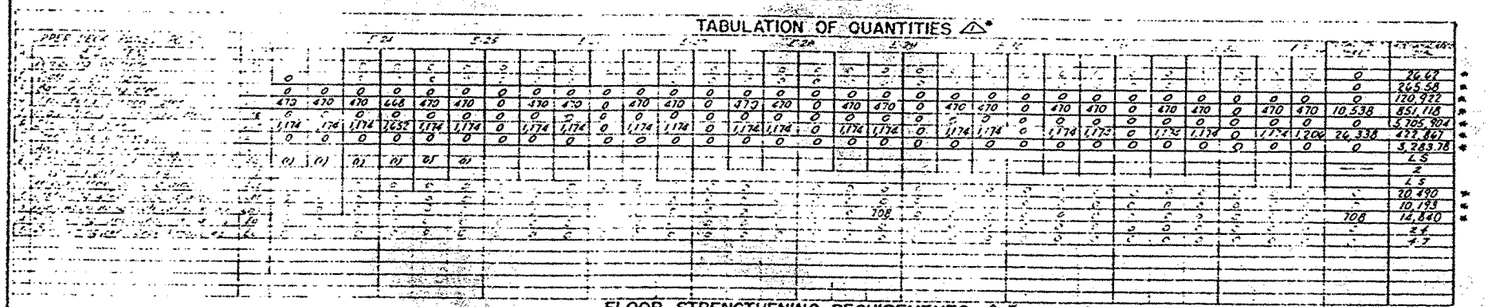


UPPER DECK PLAN

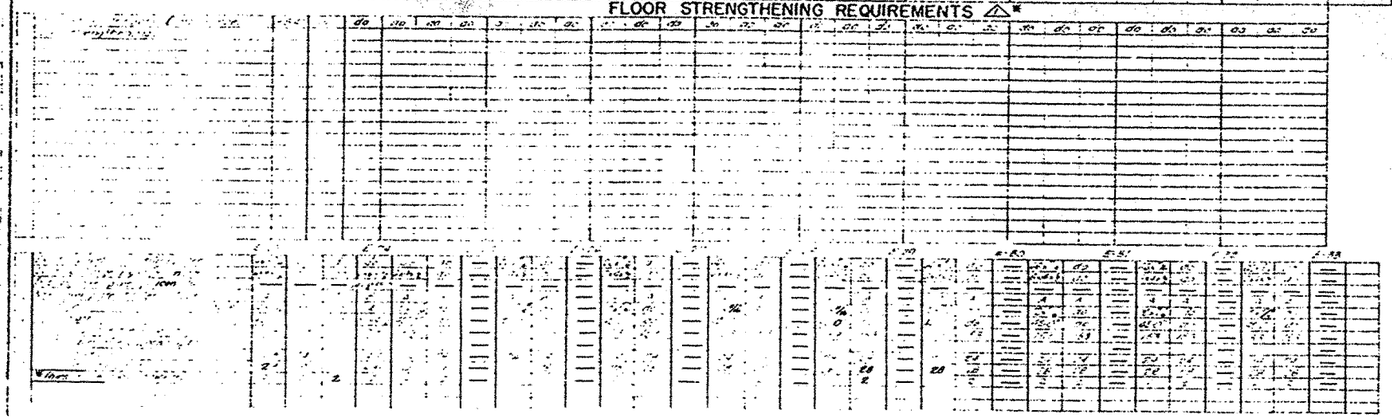


ELEVATION

TABULATION OF QUANTITIES ⚠*



FLOOR STRENGTHENING REQUIREMENTS ⚠*



LOCATION DIAGRAM

LEGEND

- Existing lane signal control lights
- Existing deck drains
- * indicates location where quantities, dimensions or denominations are changed due to revision.

NOTES

0 1 2 3 4 5 6 7 8 9 10 FEET

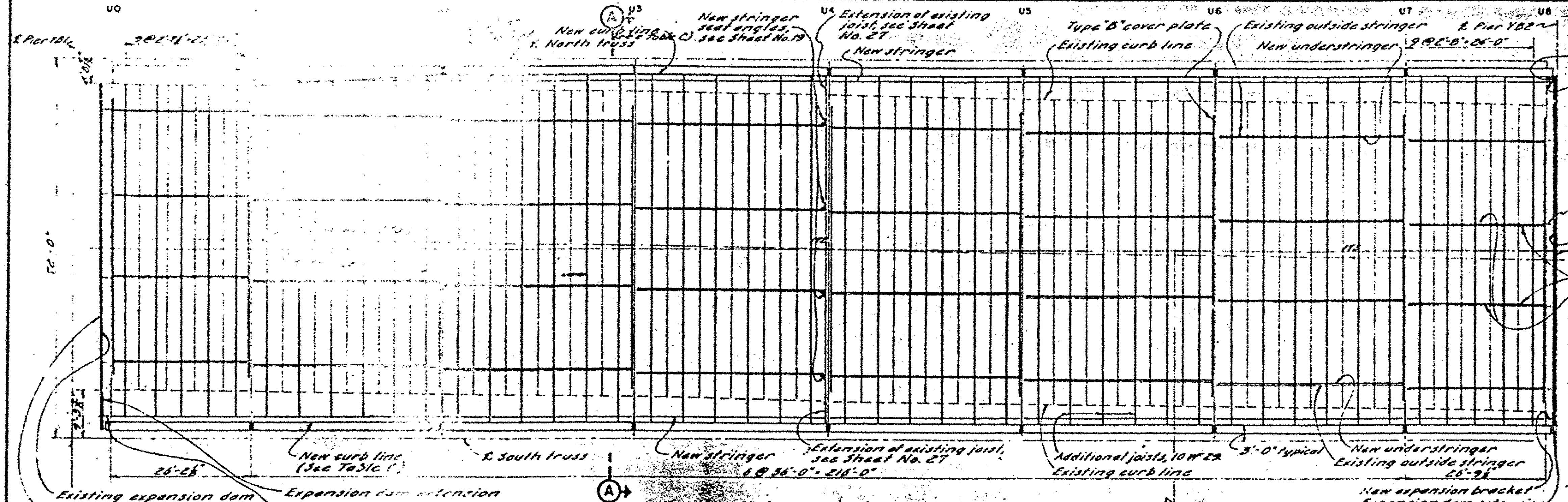
SCALE IN INCHES

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

PLAN AND ELEVATION STA 27+15 TO STA 28+50

UNLESS NOTED SCALE 1" = 50'

DRAWING C-4030

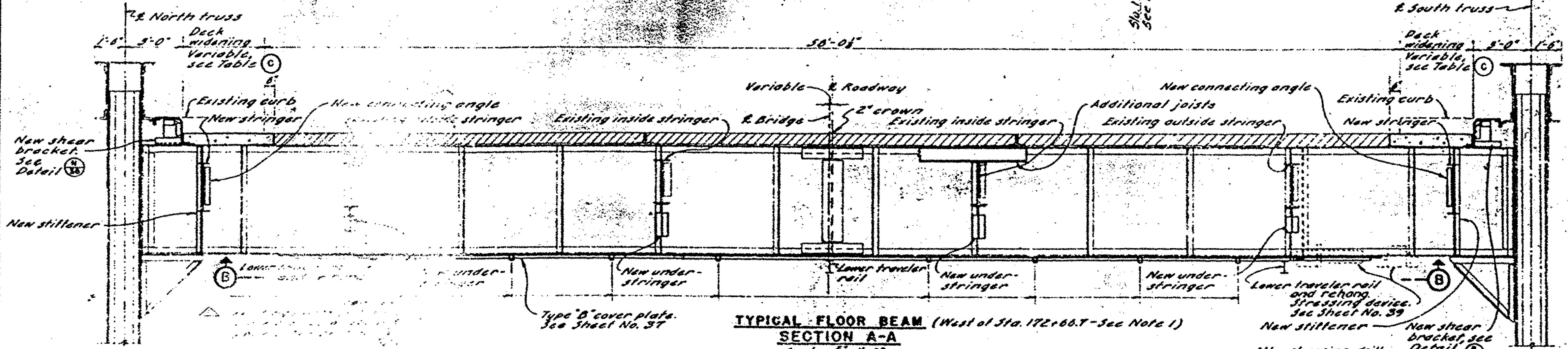


FRAMING PLAN - SPAN YB1-YB2

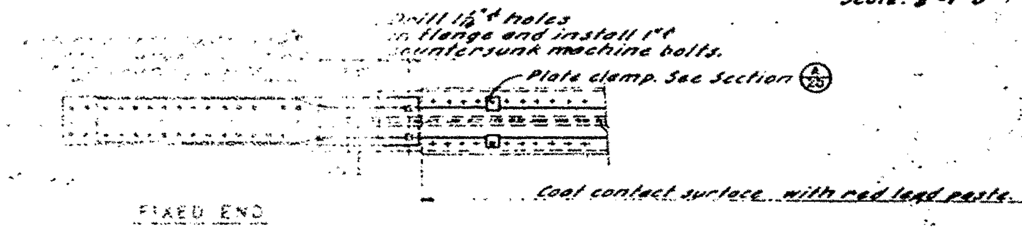
Scale: 1" = 10'-0"

DISTANCE BETWEEN EXISTING AND NEW CURB LINES									
PANEL POINT	U0	U1	U2	U3	U4	U5	U6	U7	U8
NORTH	0-0	0-0	2-7⅝	3-1 7/16	3-7 3/16	4-1⅝	4-7 11/16	5-1⅜	5-0½
SOUTH	6-2 11/16	5-10⅞	5-4½	4-10 7/16	4-4 5/16	3-10¼	3-4 3/16	2-10⅝	2-5⅝

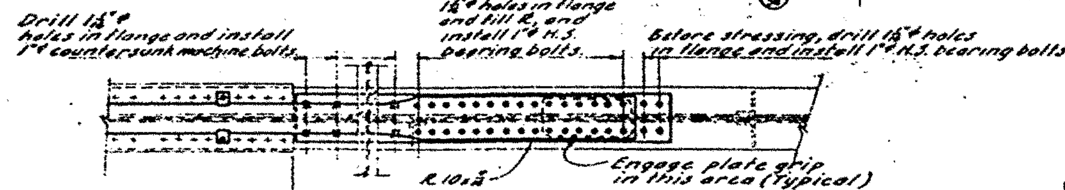
TABLE C - DECK WIDENING



TYPICAL FLOOR BEAM (West of Sta. 172+66.7 - See Note 1)
SECTION A-A
Scale: ⅝" = 1'-0"



VIEW B-B
Scale: ¾" = 1'-0"



STRESSING END
(South side shown)

NOTES

1. Deck sections East of Sta. 172+66.7 are transitional between those shown on this sheet and on Sheet No. 17.
2. For understringers, see Sheet No. 34. Shapes of understringers in end panels are to be the same as those in the 36' panels.
3. For new stringer connections, see Sheet No. 27
4. For joist details, see Sheet No. 34.
5. For curb alterations, see Sheets No. 28 and 29.
6. For expansion dam extensions, see Sheet No. 26. For new expansion brackets, see Sheet No. 27.
7. For erection procedure of floor beam cover plates, see Sheet No. 20.
8. For work on stringer seats, see Sheet No. 19.
9. For traveler rail adjustment, see Sheet No. 42.

PROJECTS ENGINEER — LICENSE 1479

DATE APPROVED October 6, 1961

APPROVAL RECOMMENDED BY [signature] SUPERVISING BRIDGE ENGINEER

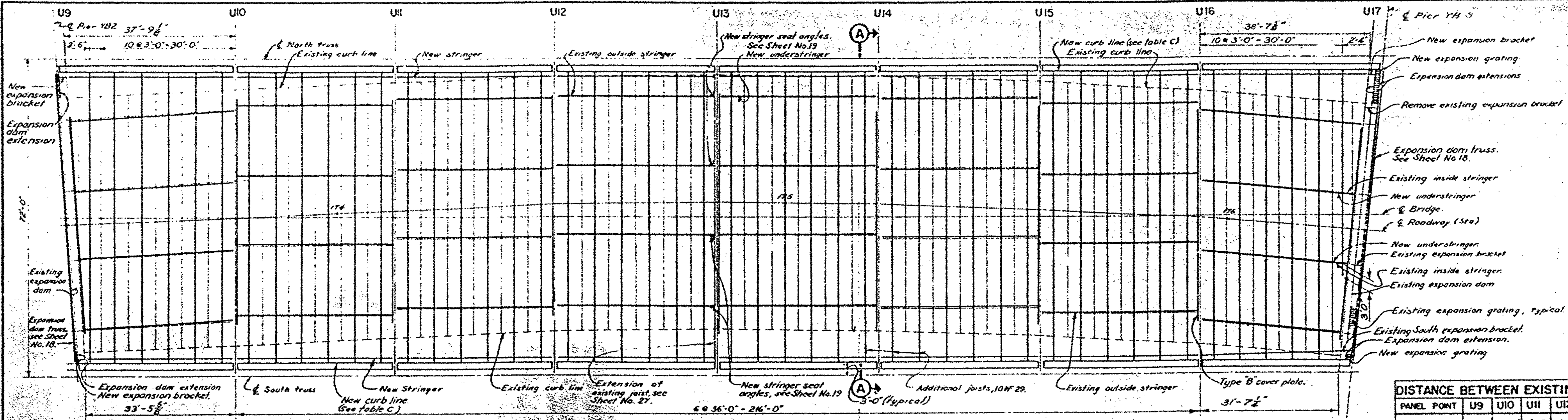
MARK	DATE	DESCRIPTION	BY	CH'K
1	11.1.63	As built with revisions	J.L.S.	EEF
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

SPAN YB1 - YB2 DECK FRAMING

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 16 | DRAWING NO C-4030-16R

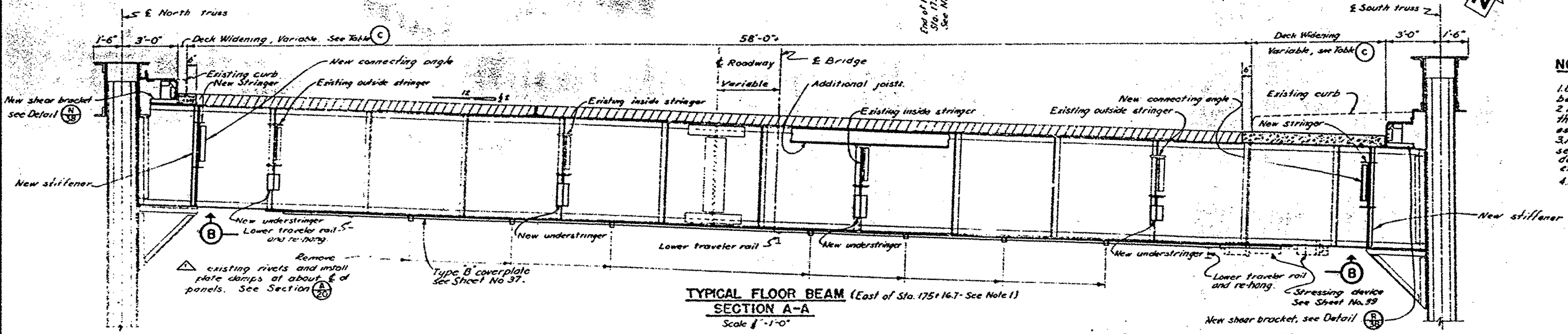


FRAMING PLAN - SPAN YB2-YB3
Scale 1" = 10'-0"

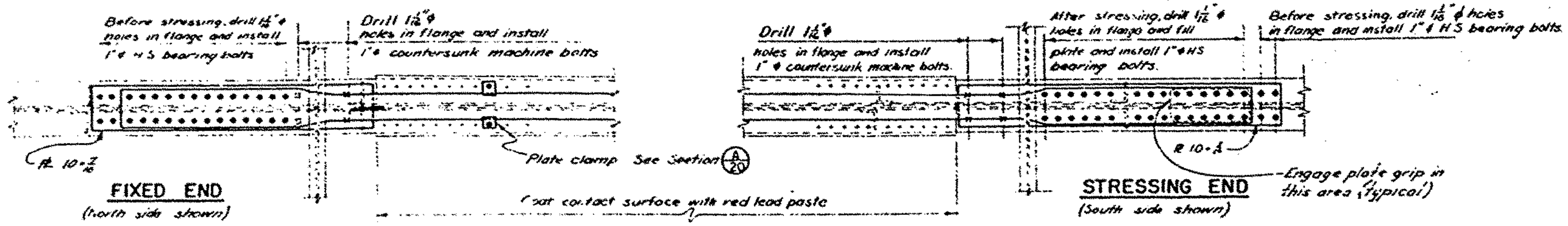
End of transition Sta. 175+16.7 See Note 1

DISTANCE BETWEEN EXISTING AND NEW CURB LINES									
PANEL POINT	U9	U10	U11	U12	U13	U14	U15	U16	U17
NORTH	5'-7 1/8	3'-10 1/4	2'-2 5/8	0'-11 1/4	0'-6	0'-10 7/8	2'-2	4'-3 1/4	7'-4 13/16
SOUTH	2'-6 1/4	4'-0 13/16	5'-8 1/4	7'-0 1/4	7'-6	7'-0 7/8	5'-9 1/4	3'-6 13/16	0'-10 3/4

TABLE C - DECK WIDENING



TYPICAL FLOOR BEAM (East of Sta. 175+16.7 - See Note 1)
SECTION A-A
Scale 1/8" = 1'-0"



VIEW B-B
Scale 3/4" = 1'-0"

NOTES

1. Deck sections West of Sta 175+16.7 are transitional between those shown on this sheet and on Sheet No 16.
2. Notes 2,3,4,7,8 and 9 on Sheet No 16 apply except that understringers in end panel at YB3 are shaped as shown on Sheet No 19.
3. For work on existing expansion brackets at Pier YB3 see Sheet No 18 & 27. For new expansion grating and expansion dam extensions at Pier YB3 see Sheet No 26. For new expansion brackets, see Sheet No 27.
4. For curb alterations, see Sheet No 28.

PROJECTS ENGINEER - LICENSE
DATE APPROVED October 6, 1961

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CHK
1	11.1.63	As built with revisions	A.A.S.	EEF
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

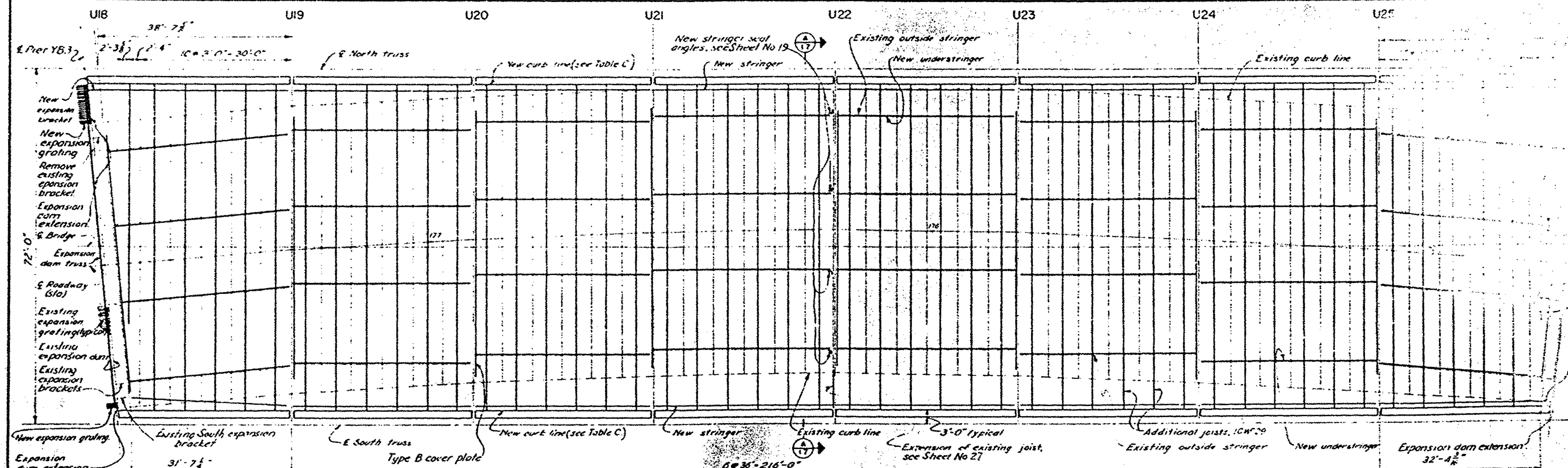
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

SPAN YB2-YB3 DECK FRAMING

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 17 | DRAWING C 4030-17R

DATE APPROVED October 6, 1961

PROJECTS ENGINEER—LICENSE 1479



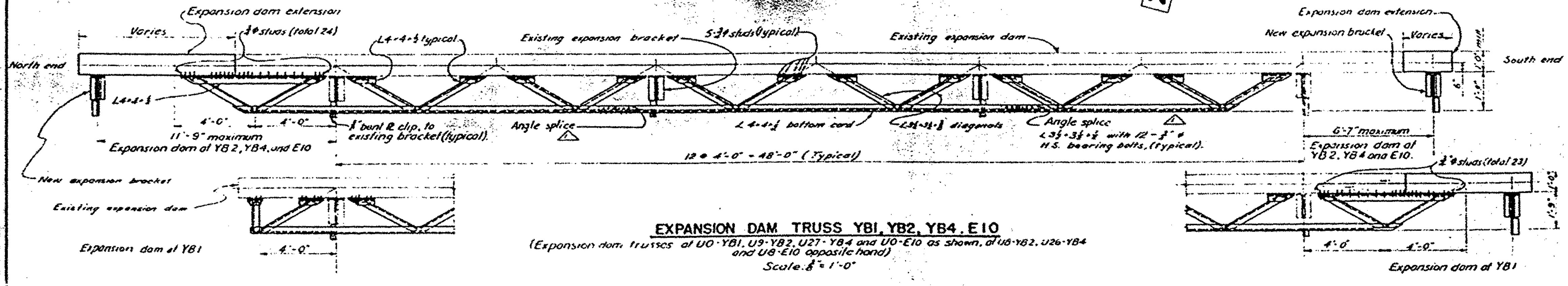
FRAMING PLAN-SPAN YB3-YB4

Scale: 1" = 10'-0"

N

TABLE C - DECK WIDENING

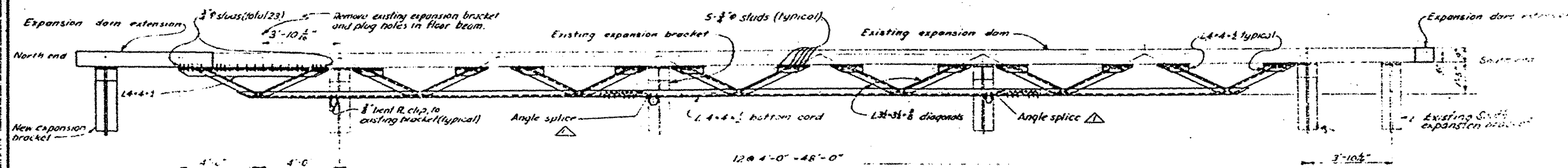
DISTANCE BETWEEN EXISTING AND NEW CURB LINES									
PANEL POINT	U18	U19	U20	U21	U22	U23	U24	U25	U26
NORTH	7-6 3/4	4-4 3/16	2-2 3/8	0-11 1/2	0-6	0-10 1/2	2-2	4-3 5/16	7-6 3/4
SOUTH	0-9 3/4	3-5 13/16	5-6 1/2	7-0 1/2	7-6	7-0 1/2	5-9 1/2	3-6 15/16	0-9 3/4



EXPANSION DAM TRUSS YB1, YB2, YB4, E10

(Expansion dam trusses at U0-YB1, U9-YB2, U27-YB4 and U0-E10 as shown, at U8-YB2, U26-YB4 and U8-E10 opposite hand)

Scale: 3/8" = 1'-0"



EXPANSION DAM TRUSS YB3

(Expansion dam trusses: at U18 as shown, at U17 opposite hand)

Scale: 3/8" = 1'-0"

NOTES

1. For floor beams see section (A/17)
2. Notes 2, 3, 4, 7, 8 and 9 on Sheet No. 16 apply; except that understringers in end panel at YB3 are shaped as shown on Sheet No. 19.
3. For work on existing expansion brackets at Pier YB3, see Sheet No. [illegible]. For new expansion grating at Pier YB3 and expansion dam extensions, see Sheet No. 26. For new expansion brackets, see Sheet No. 27.
4. For typical expansion dam truss details, see Sheet No 34.
5. For curb alterations see Sheets No 28 and 30.
6. All connections to existing expansion dam to be 3/4"φ full base threaded studs (Nelson HFB or equal)

8 THS — 10 THS — SCALE IN INCHES

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER — LICENSE

MARK	DATE	DESCRIPTION	BY	CHK
1	11.1.63	[illegible]		

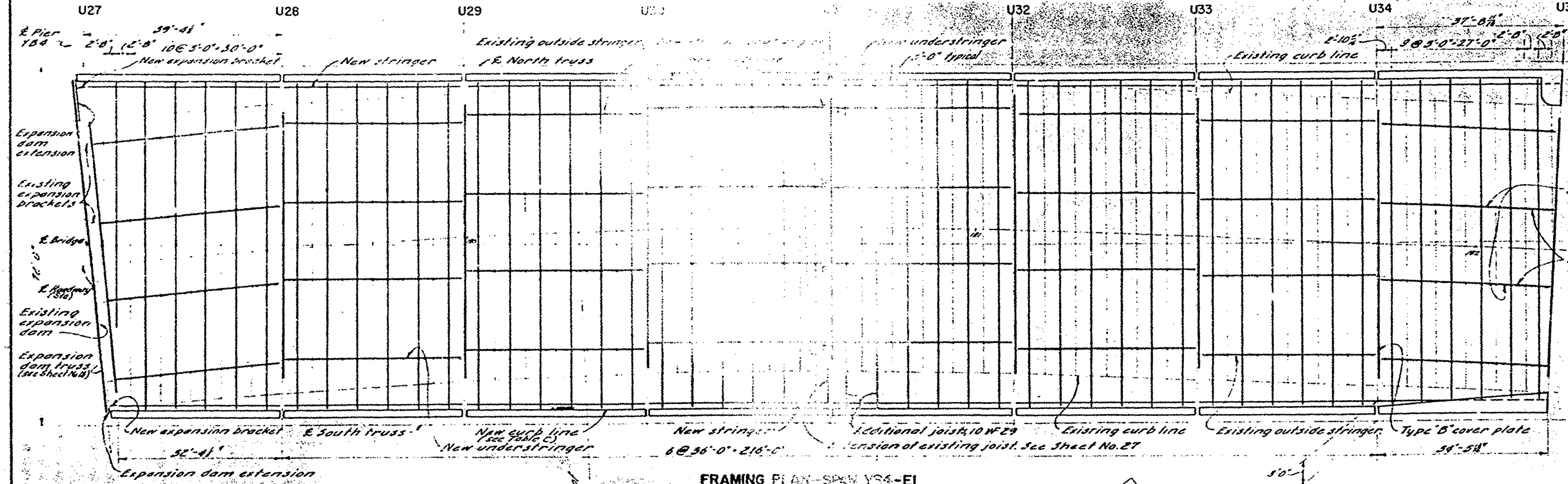
REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK - EAST BAY

SPAN YB3-YB4 DECK FRAMING AND DETAILS

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No 18 | DRAWING C 4030-18R



FRAMING PLAN-SPAN YB4-E1

Scale: 1"=10'-0"

PROJECTS ENGINEER - LICENSE 1479

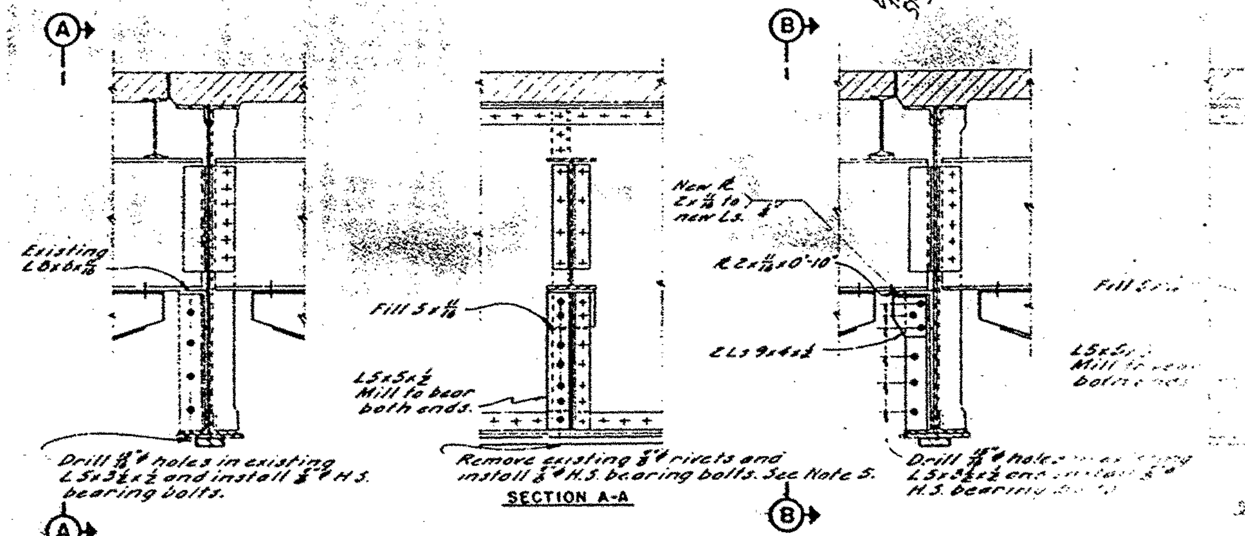
DATE APPROVED Oct 6, 1961

DISTANCE BETWEEN EXISTING AND NEW CURB LINES									
PANEL POINT	U27	U28	U29	U30	U31	U32	U33	U34	U35
NORTH	7-7 5/16	4-4 5/16	2-2 9/16	0-11 5/16	0-6	0-10 13/16	2-2 1/16	3-9 5/8	5-0 1/2
SOUTH	0-9 1/16	3-6 1/16	5-0 9/16	7-0 9/16	7-6	7-0 13/16	5-9 9/16	4-1 5/8	6-0

TABLE C - DECK WIDENING

NOTES

1. For deck sections West of Sta. 180+22.0 see Section. Deck sections East of Sta 180+22.0 are transitions between those shown on Sheet No. 16 and 17. (5)
2. Notes 2,3,4,7,8 and 9 on Sheet No.16 apply.
3. For expansion dam extensions see Sheet No.26. For new expansion brackets see Sheet No.27
4. For curb alterations, see Sheets No. 26 and 30.
5. Replace one rivet at a time.

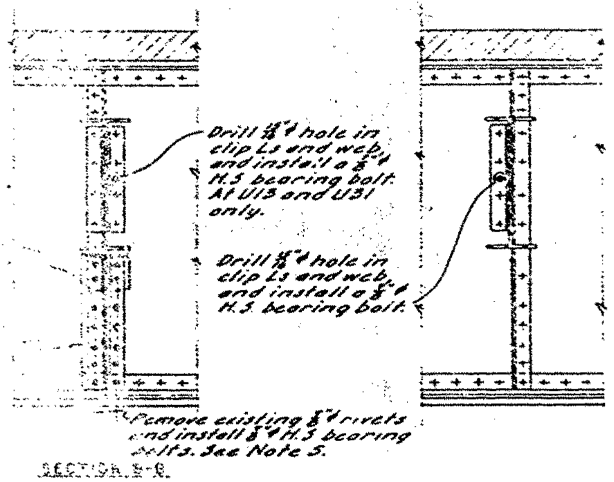


OUTSIDE STRINGERS

INSIDE STRINGERS

STRINGER SEAT STRENGTHENING

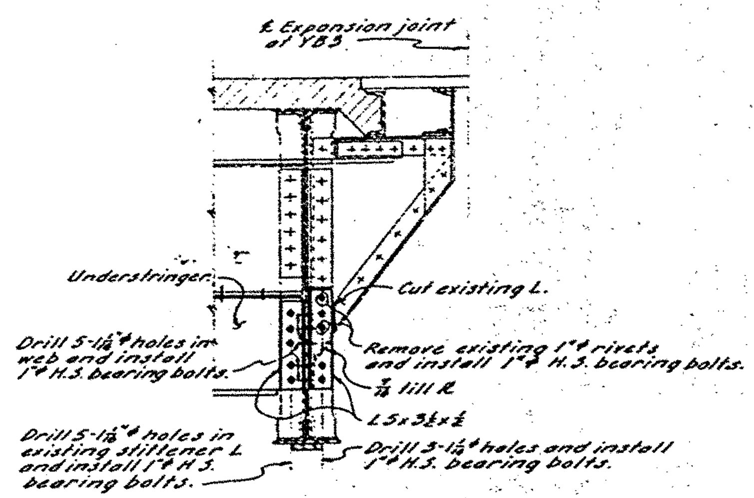
(At floor beams U4, U13, U22 and U31)



INSIDE STRINGERS

CLIP ANGLE STRENGTHENING

(At floor beams U10, U11, U14, U15, U16, U28, U29, U30, U32, U33 and U34)



Note: Strengthen all existing bracket connections at YB3, as shown, except the brackets which have no existing stringers behind them.

EXPANSION BRACKETS AT YB3

(Total 8)

SCALE IN INCHES

APPROVAL RECOMMENDED BY [signature] SUPERVISING BRIDGE ENGINEER LICENSE 1727

DESIGN	
DETAILS	
QUANTITIES	
TRACED	
DESIGN AND DETAILS REVIEWED BY	

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK-EAST BAY

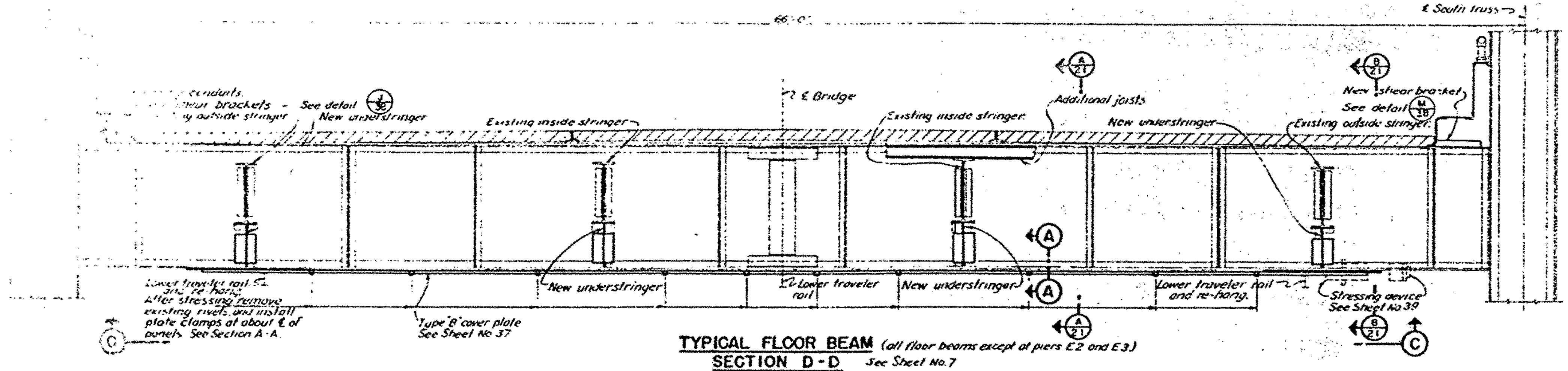
SPAN YB4-E1 DECK FRAMING AND DETAILS

MARK	DATE	DESCRIPTION REVISION	BY	CHK.
1		As built without revisions		EEF

UNLESS NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET NO 19 | DRAWING C-4030-19R

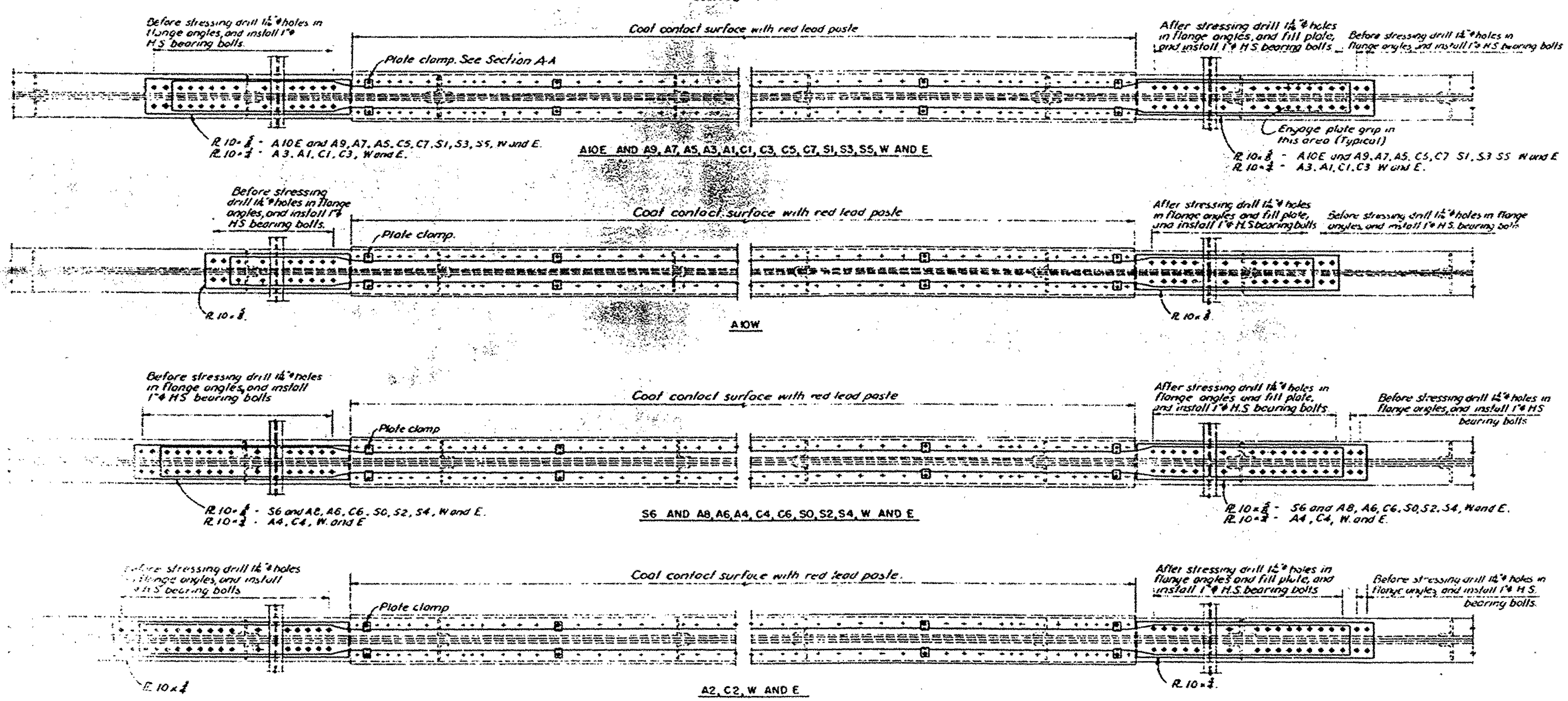
PROJECTS ENGINEER · LICENSE DATE

DATE APPROVED October 6, 1961



TYPICAL FLOOR BEAM (all floor beams except at piers E2 and E3)
SECTION D-D
See Sheet No.7

Scale: 1/8" = 1'-0"



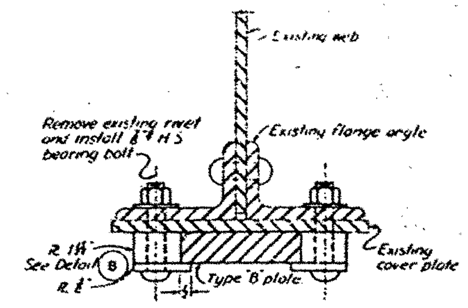
FIXED END
(North side shown)

STRESSING END
(South side shown)

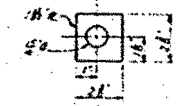
VIEW C-C

NOTES

1. For stringer seat strengthening see Sheet No. 22.
2. For understringers see Sheet No 21.
3. For traveler rail adjustment see Sheet No 43.
4. For panel point designation see Sheet Nos. 7 and 8



SECTION A-A
Scale 3" = 1'-0"



DETAIL B
Scale 3" = 1'-0"

SUGGESTED ERECTION PROCEDURE FOR FLOOR BEAM COVER PLATES

1. Lower traveler rails to clear plate.
2. Drill flange holes at fixed end through template.
3. Clean contact areas of flange angles as specified.
4. Coat specified contact area of cover plate with red lead paste.
5. Erect cover plate, bolt fixed end to floor beam flange
6. Erect stressing device (see Sheet No. 39)
7. Stress cover plate by jacking in increments, allowing time for inspection after each increment. Lock jacks when the specified initial prestress is reached (see Sheets No 6-15)

   Note: Prestress tolerances: +5%, no understress.
8. While plate is held under full prestress drill holes in floor beam flange, using accessible holes of plate as template. Install H.S. bearing bolts.

   Note: If plates cannot be bolted tight due to presence of burrs or trapped drilling refuse, remove bolts, release jacks, separate plate from flange, clean contact surfaces, retension and rebolt.
9. Remove stressing device, drill flange holes thru remaining plate holes and install remaining bolts.

SCALE IN INCHES

APPROVAL RECOMMENDED BY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

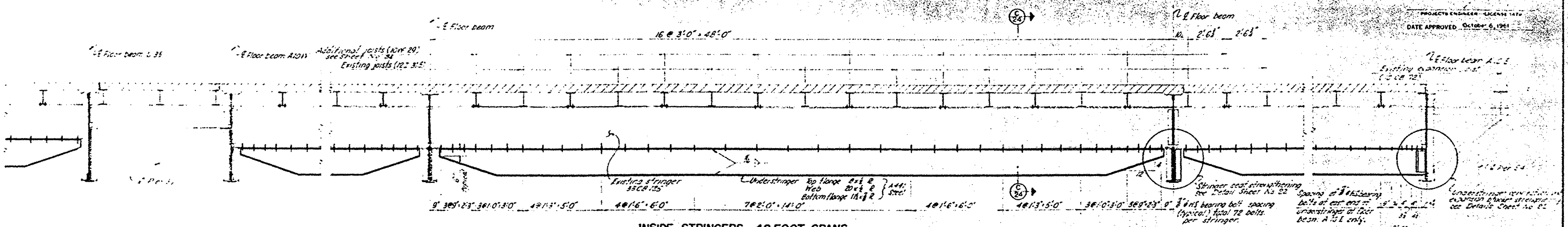
CANTILEVER STRUCTURE-FLOOR BEAMS

MARK	DATE	DESCRIPTION	BY	CHK
1	11.1.63	As built without revisions	CE	EEF
		REVISION		

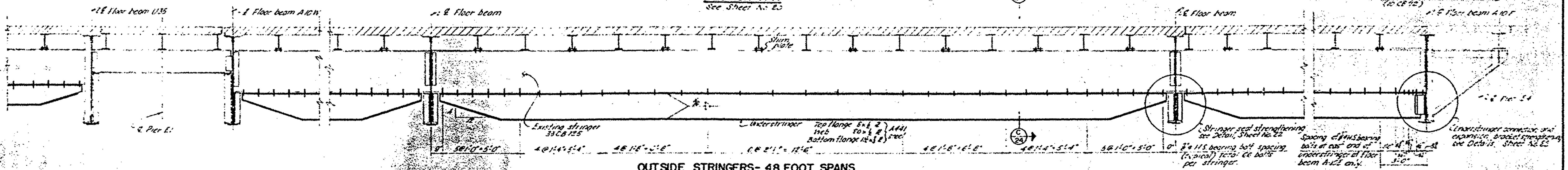
UNLESS NOTED SCALE 3/4" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 20 | DRAWING 4030 20R

PROJECTS ENGINEER · LICENSE
DATE APPROVED October 6, 1961

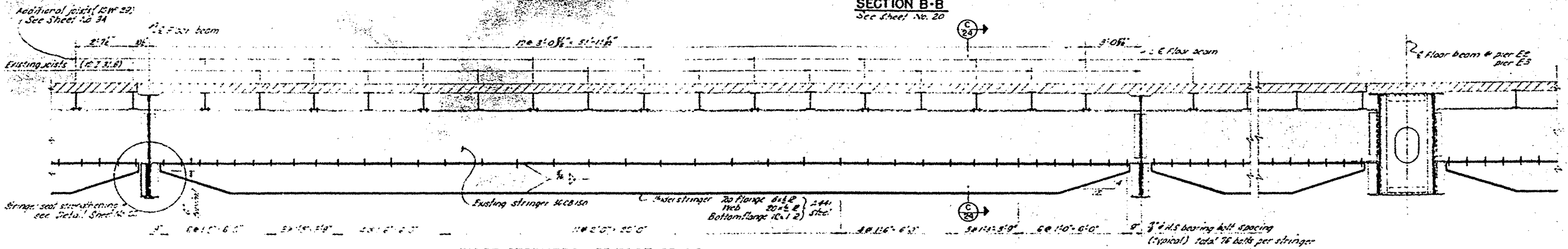
APPROVAL RECOMMENDED BY



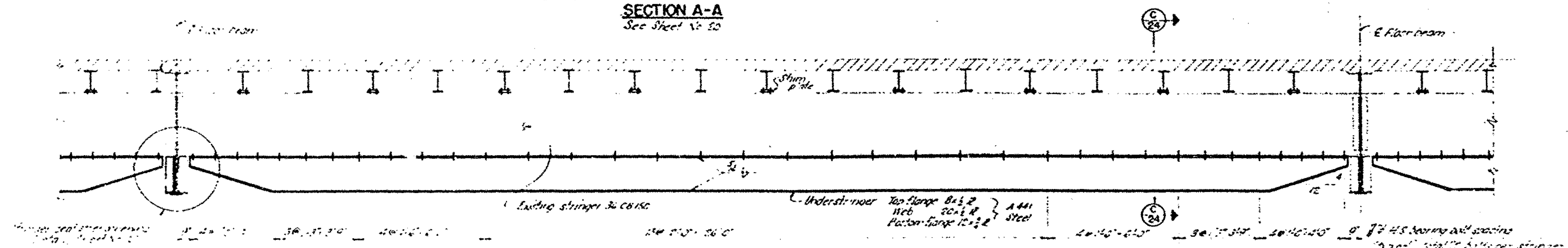
INSIDE STRINGERS - 48 FOOT SPANS
SECTION A-A
See Sheet No. 20



OUTSIDE STRINGERS - 48 FOOT SPANS
SECTION B-B
See Sheet No. 20



INSIDE STRINGERS - 55 FOOT SPANS
SECTION A-A
See Sheet No. 20



OUTSIDE STRINGERS-55 FOOT SPANS
SECTION B-B
See Sheet No. 20

NOTES
1. For precamber of inside understringers see Sheets No. 7 and 8. For erection procedure of understringers see Sheet No. 34.
2. For joist details see Sheet No. 34

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
1	11-1-63	As built without revisions	CE	EEF
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

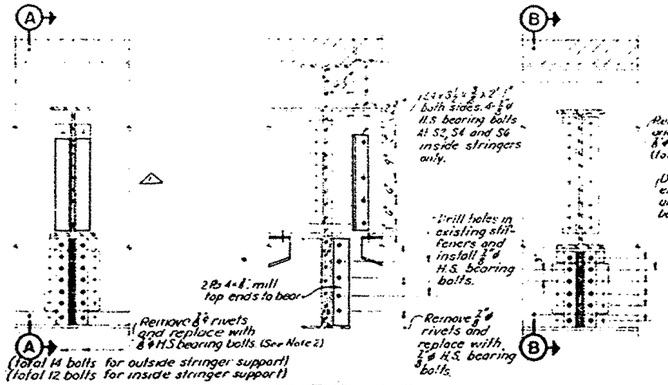
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK - EAST BAY

CANTILEVER STRUCTURE-STRINGERS

UNLESS NOTED SCALE ⅜" = 1'-0" BRIDGE 33-25 34-03 34-04 SHEET No 21 DRAWING 4030-21R

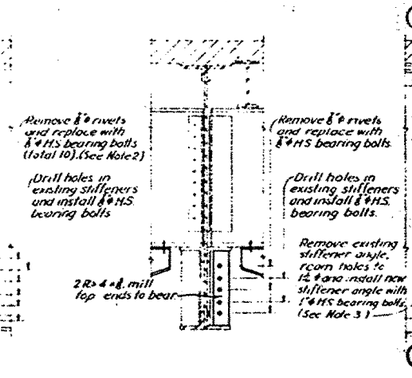
PROJECT ENGINEER — LICENSE 1678

DATE APPROVED October 6, 1961



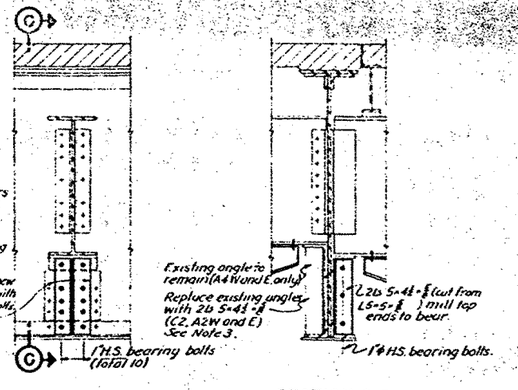
SECTION A-A

STRINGERS
(At floor beams C6, S0, S2, S4, W and E and S6)



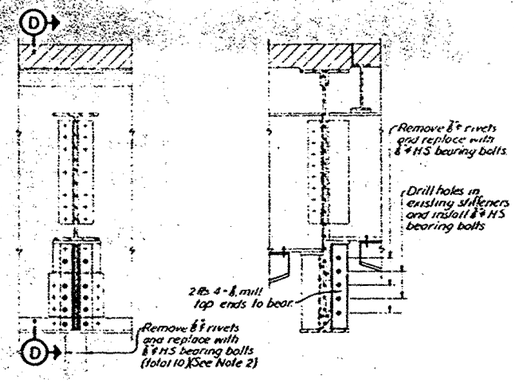
SECTION B-B

OUTSIDE STRINGERS
(At floor beams C2, A2, W and E)



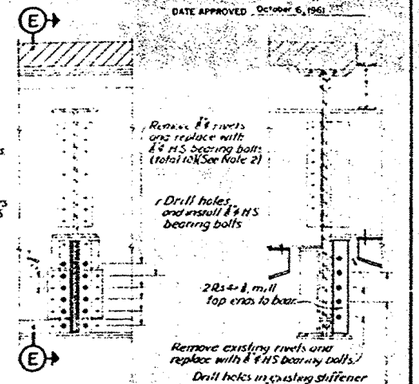
SECTION C-C

INSIDE STRINGERS
(At floor beams C2, A2, A4 W and E)
OUTSIDE STRINGERS
(At floor beams A4 W and E)



SECTION D-D

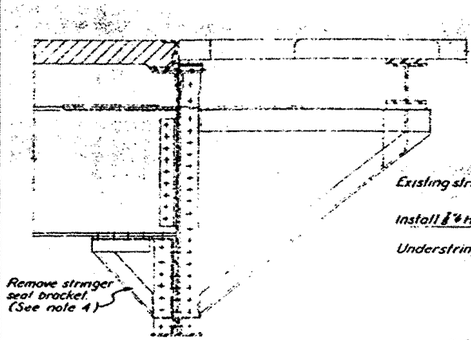
OUTSIDE STRINGERS
(At floor beams C4 W and E)



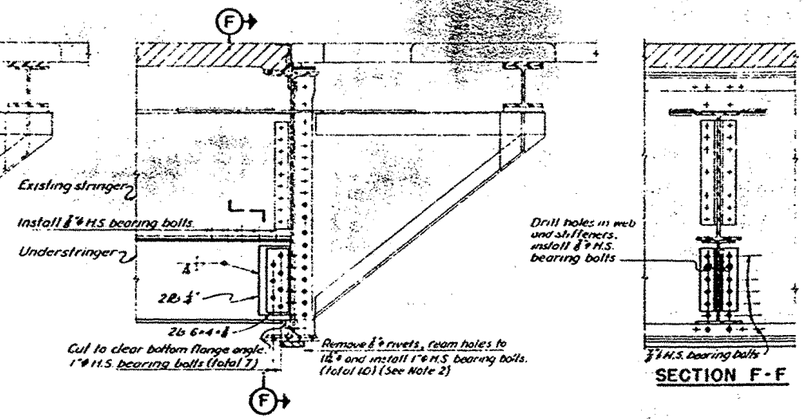
SECTION E-E

INSIDE STRINGERS
(At floor beams C4, W and E)

STRINGER SEAT STRENGTHENING

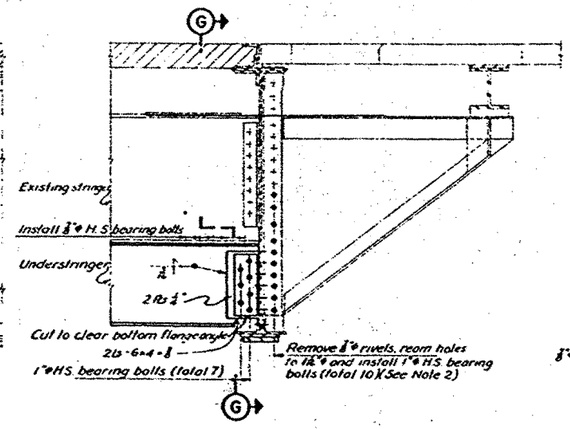


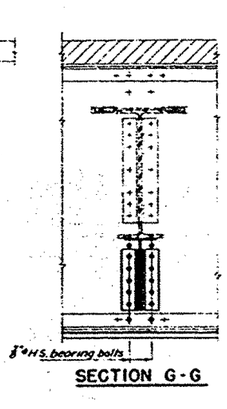
EXISTING EXPANSION BRACKET



SECTION F-F

INSIDE EXPANSION BRACKETS





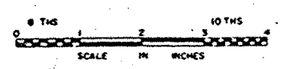
SECTION G-G

OUTSIDE EXPANSION BRACKETS

EXPANSION BRACKET STRENGTHENING AT PIER E4

NOTES

1 For designation and location of panel points (eg. A2 C2), see sheet No's 7 and 8.
2 Replace one rivet at a time.
3 Replace one stiffener angle at a time. Provide temporary support during erection.
4 Provide temporary bracing for the expansion bracket during and after removal of stringer seat bracket.



APPROVAL RECOMMENDED BY

MARK	DATE	REVISION DESCRIPTION	BY	CH'K
1	11-1-63	As built with revisions	DB	EEF

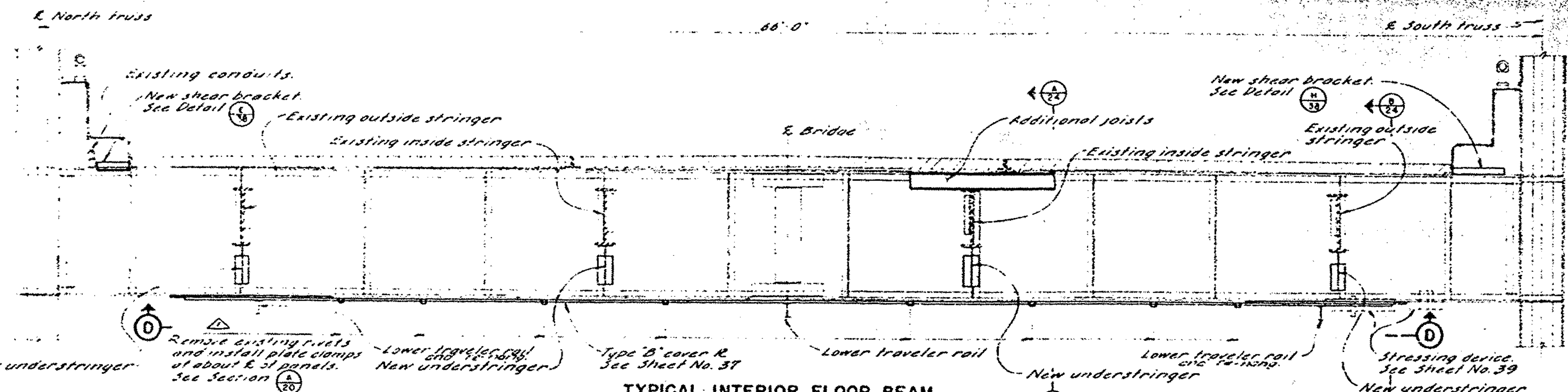
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

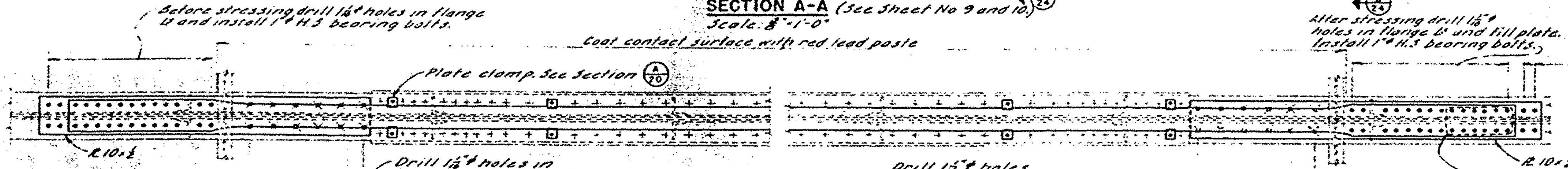
CANTILEVER STRUCTURE-DETAILS

UNLESS NOTED SCALE 3/4" = 1'-0"
BRIDGE 33-25 34-63 34-74
SHEET NO 22
DRAWING 4030-22R

PROJECTS ENGINEER - LICENSE
DATE APPROVED October 6, 1961



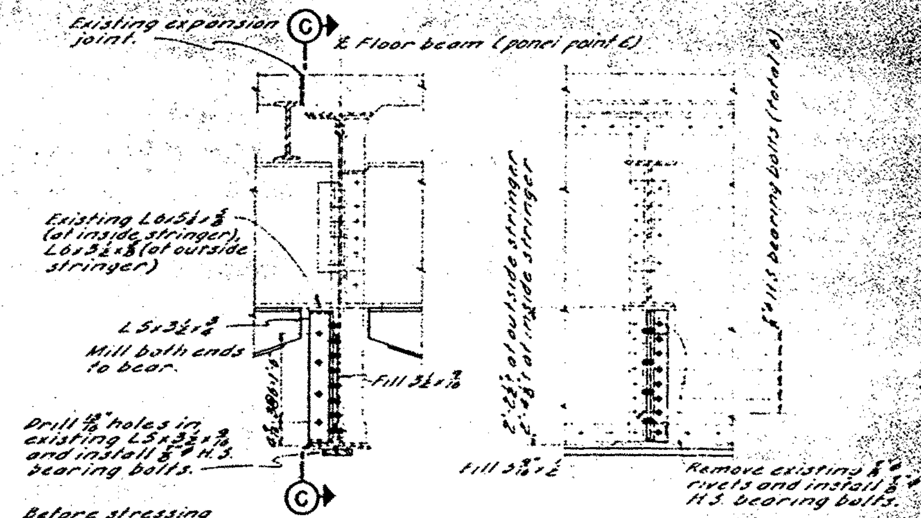
TYPICAL INTERIOR FLOOR BEAM
SECTION A-A (See Sheet No 9 and 10.)
Scale: ⅛"-1'-0"



FIXED END
(North side shown)

VIEW D-D
Scale · ¼"-1'-0"

STRESSING END
(South side shown)

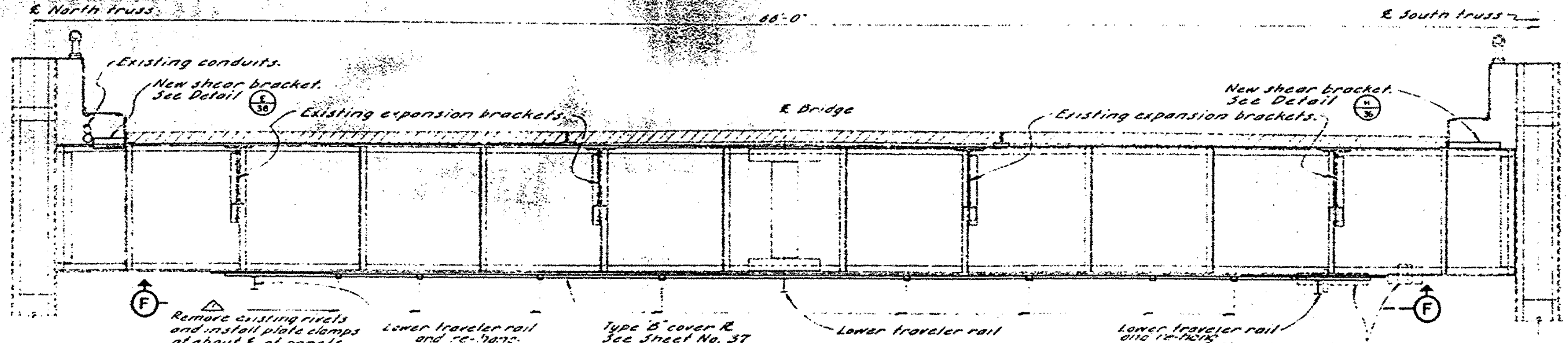


SECTION C-C
Scale ¾"-1'-0"

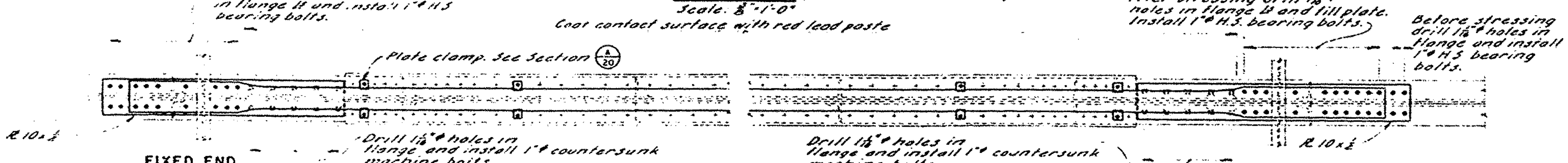
STRINGER SEAT STRENGTHENING
DETAIL B
(At interior expansion joints only, E4-E9)
Scale ¾"-1'-0"

NOTES

1. For erection procedure of cover plates, see Sheet No 20.
2. For understringers, see Sheet No. 24.
3. For traveler rail adjustment, see Sheet No. 43.



TYPICAL END FLOOR BEAM
SECTION E-E (See Sheet No. 9 and 10)
Scale. ⅛"-1'-0"



FIXED END
(North side shown)

VIEW F-F
Scale ¼"-1'-0"

STRESSING END
(South side shown)

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.1.63	As built with revisions	??	EEF
		REVISION		

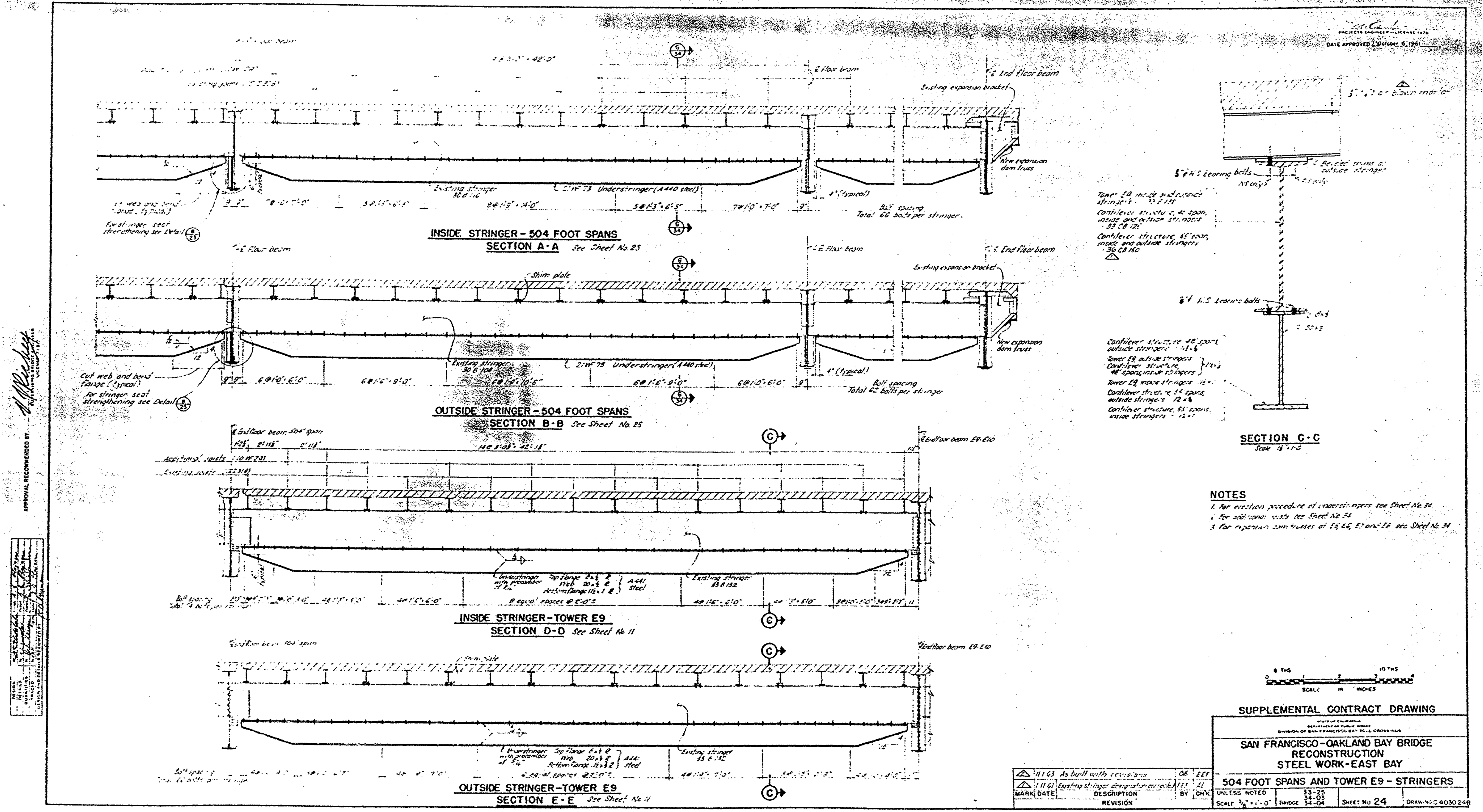
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK- EAST BAY

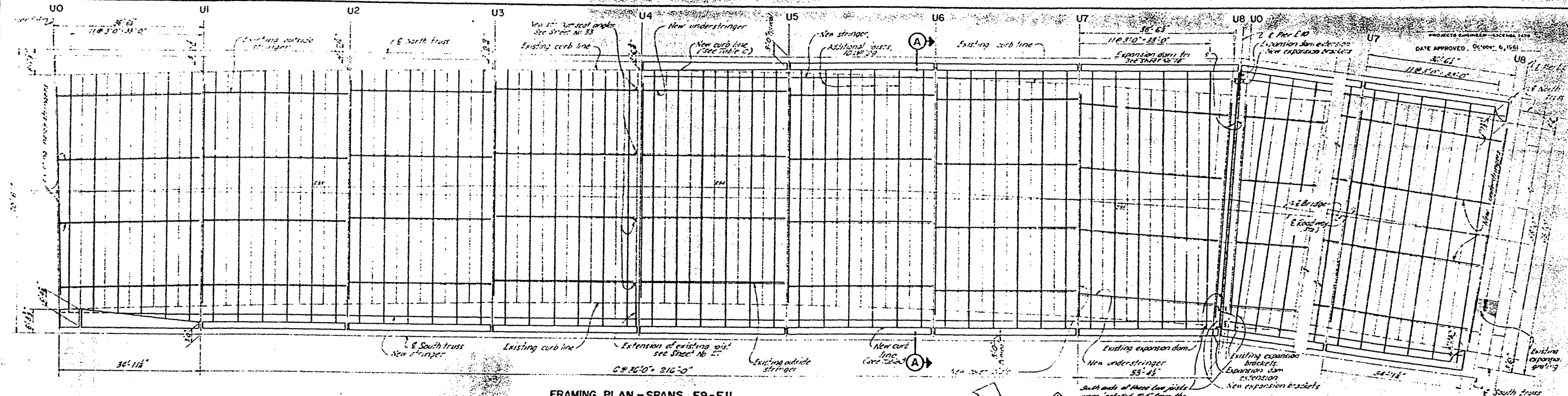
504 FOOT SPANS - FLOOR BEAMS

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET No 23 | DRAWING C-4C5C-23H

APPROVAL RECOMMENDED BY

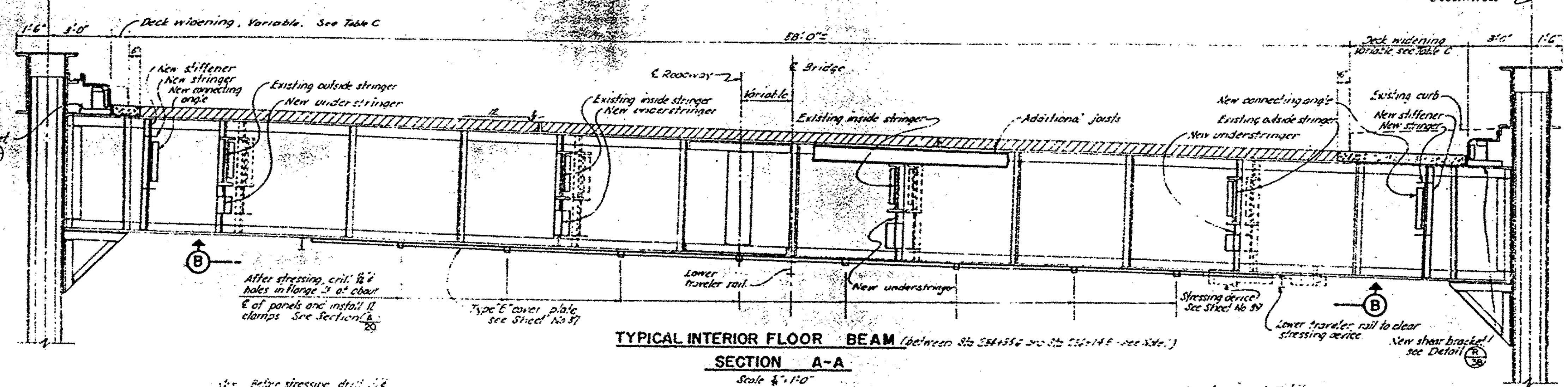


DATE APPROVED October 6, 1961
PROJECTS ENGINEER—LICENSE
E Floor beam
E End floor beam
Existing expansion bracket
New expansion dam truss
Existing stringer 30 B 116
21 WF 73 Understringer (A440 steel)
8@1'9" = 14'0"
5@1'3" = 6'3"
7@1'0" = 7'0"
4" (typical)
Bolt spacing Total 66 bolts per stringer
For stringer seat strengthening see Detail 8/23
INSIDE STRINGER - 504 FOOT SPANS
SECTION A-A See Sheet No. 25
Shim plate
Cut web and bend flange (typical)
6@1'0" = 6'0"
6@1'6" = 9'0"
Existing stringer 30 B 108
6@1'9" = 10'6"
21 WF 73 Understringer (A440 steel)
Bolt spacing Total 62 bolts per stringer
OUTSIDE STRINGER - 504 FOOT SPANS
SECTION B-B See Sheet No. 25
E End floor beam 504' span
E End floor beam E9-E10
14@3'0" = 42'1"
Additional joists (10 WF 21)
Existing joists
Understringer with precamber Top flange Web 20 Bottom flange A441 steel
Existing stringer 33 B 132
8 equal spaces
INSIDE STRINGER - TOWER E9
SECTION D-D See Sheet No 11
Shim plate
Existing stringer 33 B 132
OUTSIDE STRINGER - TOWER E9
SECTION E-E See Sheet No 11
H.S. bearing bolts
Tower E9 inside and outside stringers
Cantilever structure, 48' span, inside and outside stringers - 33 CB 125
Cantilever structure, 55' span, inside and outside stringers - 36 CB 150
Cantilever structure 48' spans, outside stringers
Tower E9 outside stringers
Cantilever structure, 48' spans, inside stringers
Tower E9 inside stringers
Cantilever structure, 55' spans, outside stringers 12 x
Cantilever structure, 55' spans, inside stringers
SECTION C-C
NOTES
1. For erection procedure of understringers see Sheet No. 34
2. For additional joists see Sheet No. 34
3. For expansion dam trusses of E5, E6, E7 and E8 see Sheet No. 34
SCALE IN INCHES
SUPPLEMENTAL CONTRACT DRAWING
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY
504 FOOT SPANS AND TOWER E9 - STRINGERS
UNLESS NOTED SCALE 3/8" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No 24
DRAWING C 4030248
11 1 63 As built with revisions
1 11 61 Existing stringer designation corrected
MARK DATE DESCRIPTION BY CH'K
REVISION
APPROVAL RECOMMENDED BY
DESIGN DETAILS QUANTITIES TRACED DESIGN AND DETAILS REVIEWED BY



FRAMING PLAN - SPANS E9-E11

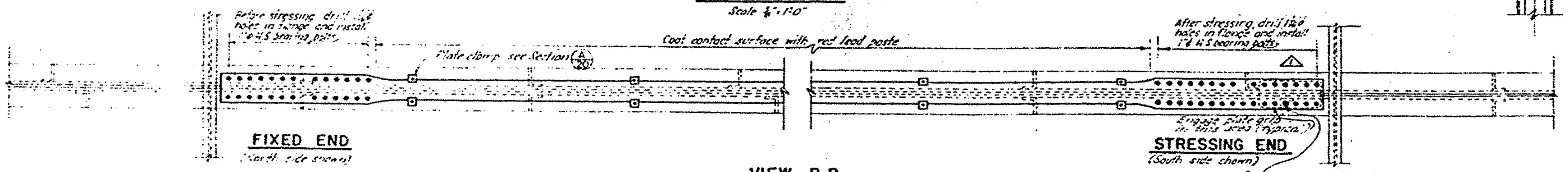
Scale 1" = 10'-0"



TYPICAL INTERIOR FLOOR BEAM (between Sta. 234+36.C and Sta. 230+14.8 - see Note 1)

SECTION A-A

Scale ¼" = 1'-0"



FIXED END

(North side shown)

STRESSING END

(South side shown)

⚠1 This hole drilled for plate grip pin only. Plugged after stressing completed

VIEW B-B

(See Note 7)

Scale ¼" = 1'-0"

	PANEL POINT	U0	U1	U2	U3	U4	U5	U6	U7	U8
SPAN E9-E10	NORTH	0-0	0-0	0-0	0-0	0-0	0-10⅜	1-10	3-5 7/16	5-10⅜
	SOUTH	0-0	4-0⅜	4-10¾	5-7 11/16	5-11⅛	5-7½	4-7½	3-11⅝	3-9 11/16
SPAN E10-E11	PANEL POINT	U0	U1	U2	U3	U4	U5	U6	U7	U8
	NORTH	5-8 5/16	3-4 5/16	1-9⅛	0-9 11/16	0-6⅛	0-10⅞	1-7⅞	2-5⅝	0-0
	SOUTH	0-11 7/16	3-0 11/16	4-9⅜	5-7 9/16	5-11⅛	5-7½	4-10	4-0¼	0-0

TABLE C - DECK WIDENING
DISTANCE BETWEEN EXISTING AND NEW CURB LINES

NOTES

1. Interior deck sections West of Sta. 234+36.C and East of Sta. 230+14.8 are transitional between those shown on this sheet and on Sheet No. 16
2. For understringers see Sheet No. 34. Shapes of understringers in end panels to be equal to those in 36' panels.
3. For new stringers see Sheet No. 27.
4. For joist details see Sheet No. 34.
5. For curb alterations see Sheets No. 28 and 31.
6. For expansion dam extensions see Sheet No. 26. For new expansion brackets see Sheet No. 27.
7. For erection procedure of floor beam coverplates see Sheet No. 30. For floor beam ... see view BB - Sheet No. 16, for floor beams U8 & U0 at E10 see view EE on Sheet No. 33 and for floor beam U8 of E11 see view ... on Sheet No. 33
8. For work on stringer seats see Sheet No. 35.
9. For traveler rail adjustment see Sheet No. 40.

SCALE IN INCHES

APPROVAL RECOMMENDED BY: [signature] SUPERVISING BRIDGE ENGINEER

PROJECTS ENGINEER

DATE APPROVED October 6, 1961

MARK	DATE	DESCRIPTION	BY	CH'K.
⚠1	11.1.63	As built with revisions	L.L.S.	E.E.F.

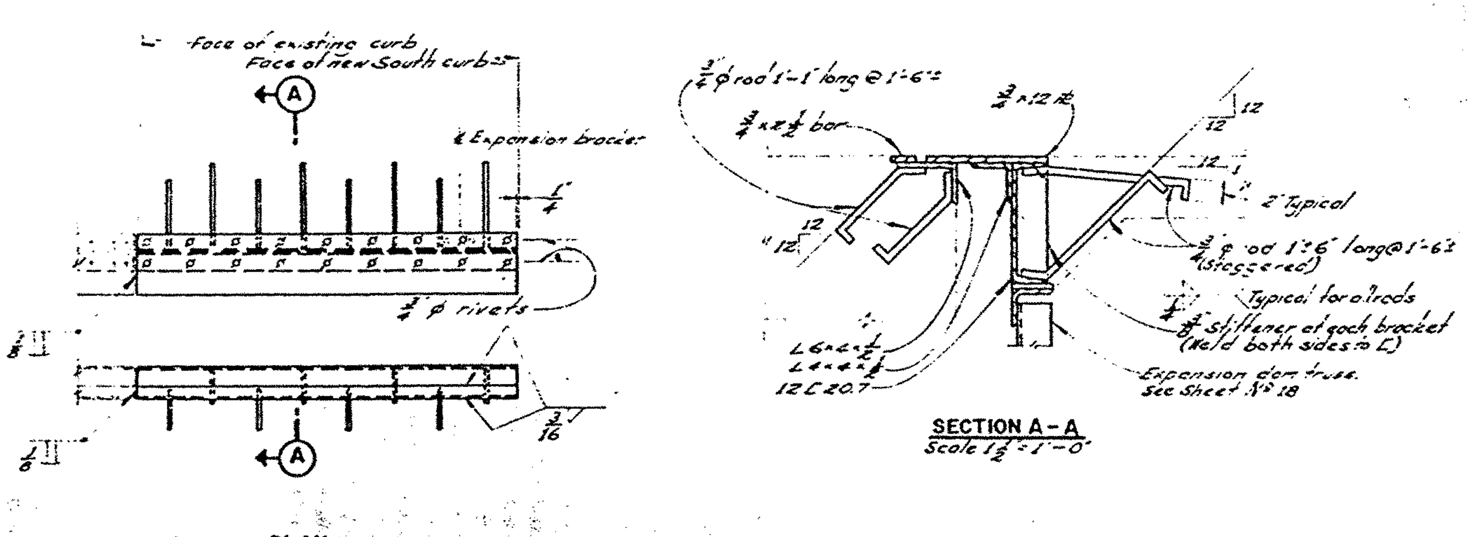
REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

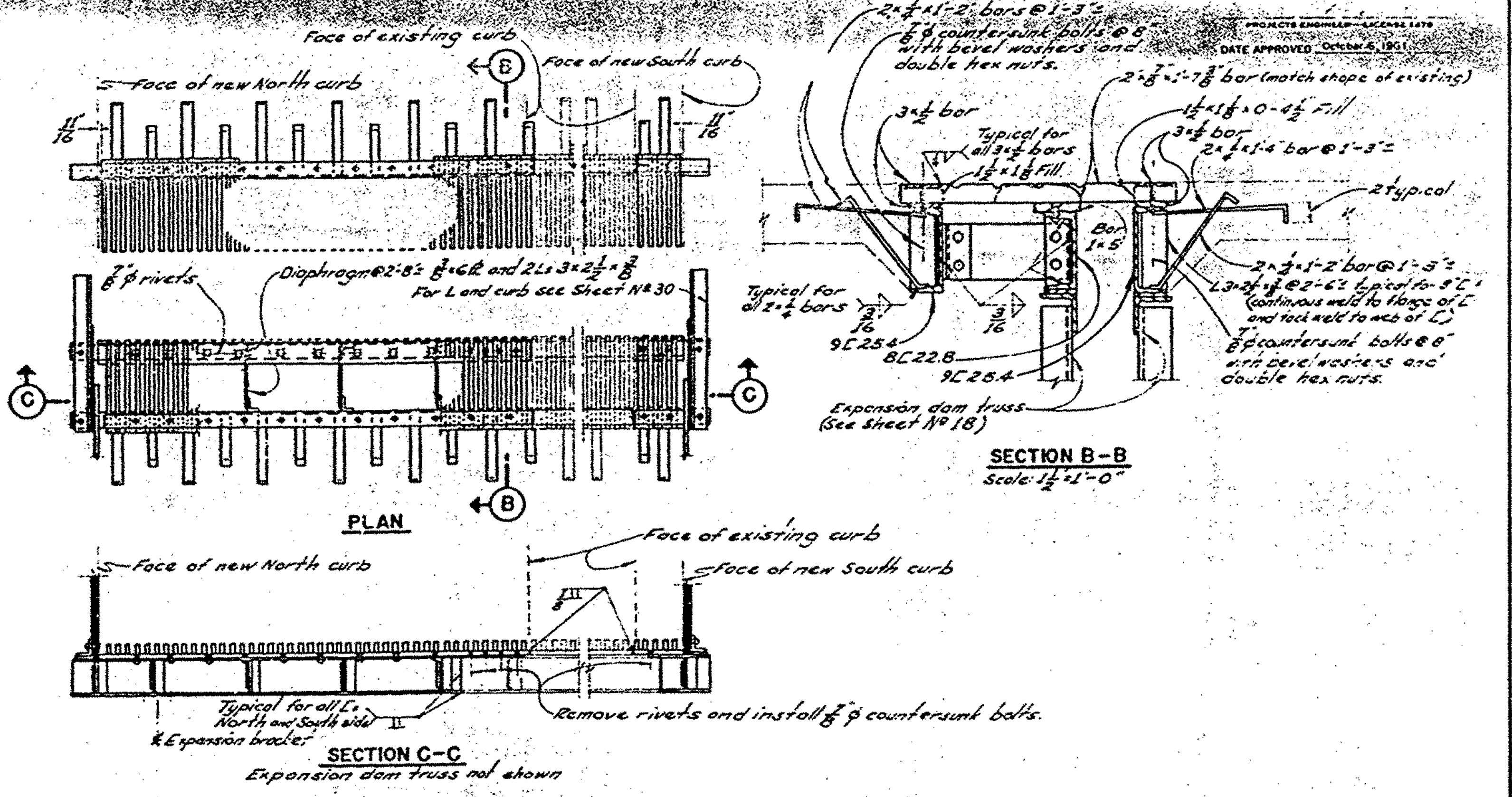
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK-EAST BAY

SPANS E9-E11 DECK FRAMING

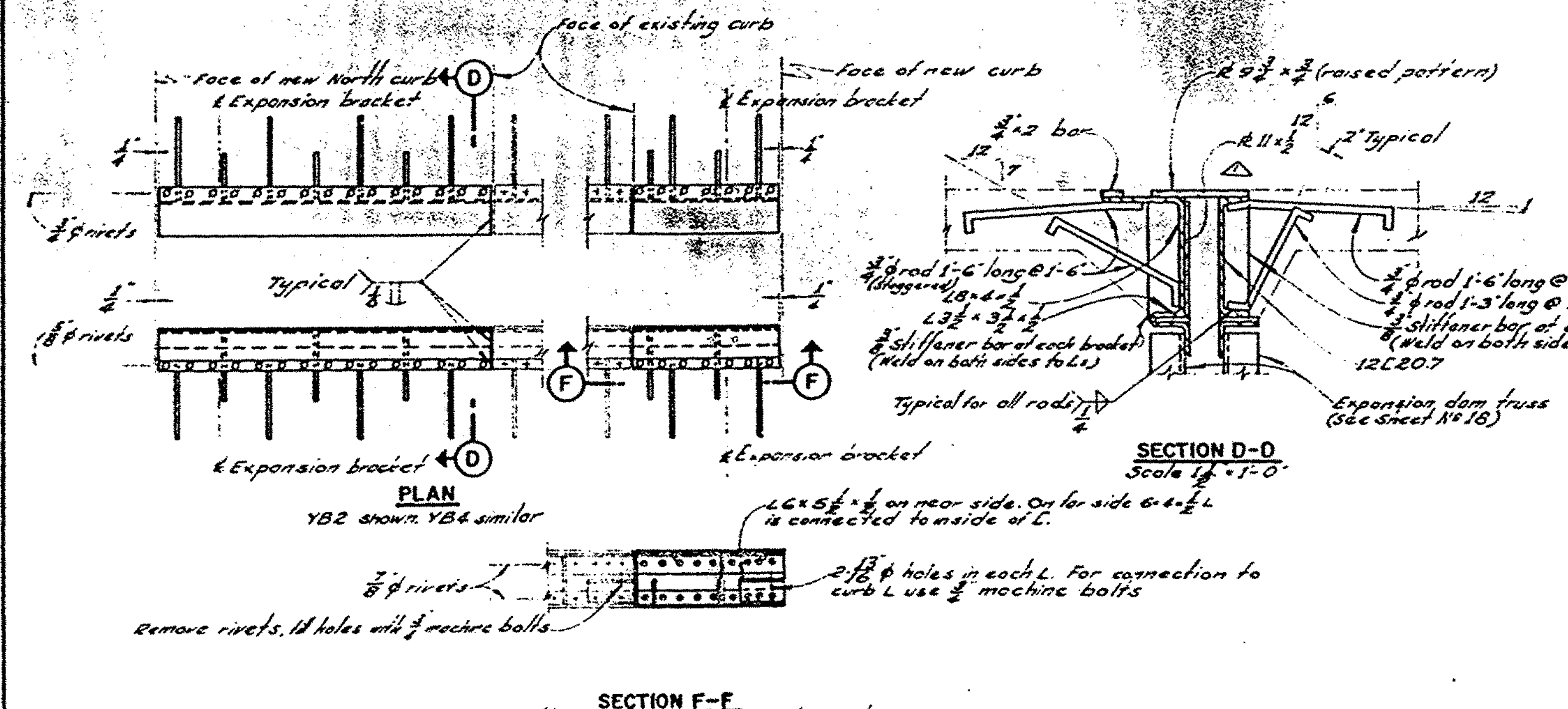
SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 25 | DRAWING C-4030-25R



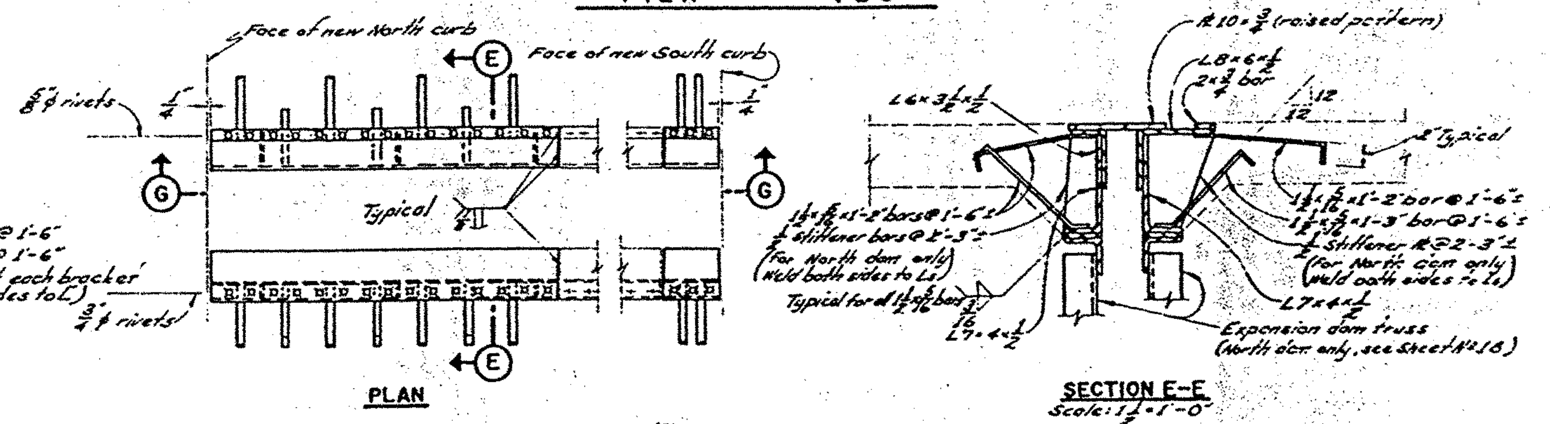
PIER YB1

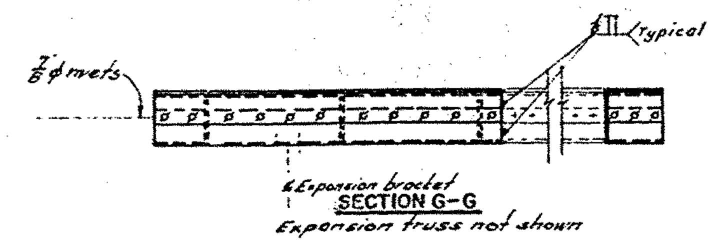


PIER YB3



PIER YB2 AND YB4





NOTES:

1. All holes 15/16" φ for 7/8" φ H.S bearing bolts unless noted.
2. For expansion brackets see Sheet Nº 27.
3. The bottom surface of grating bars shall be in one plane, free of warps or distortions after fabrication and each bar shall have full bearing on supports.

△ 4 for as-built record see shop drawings.

PIER E10

SCALE IN INCHES

SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

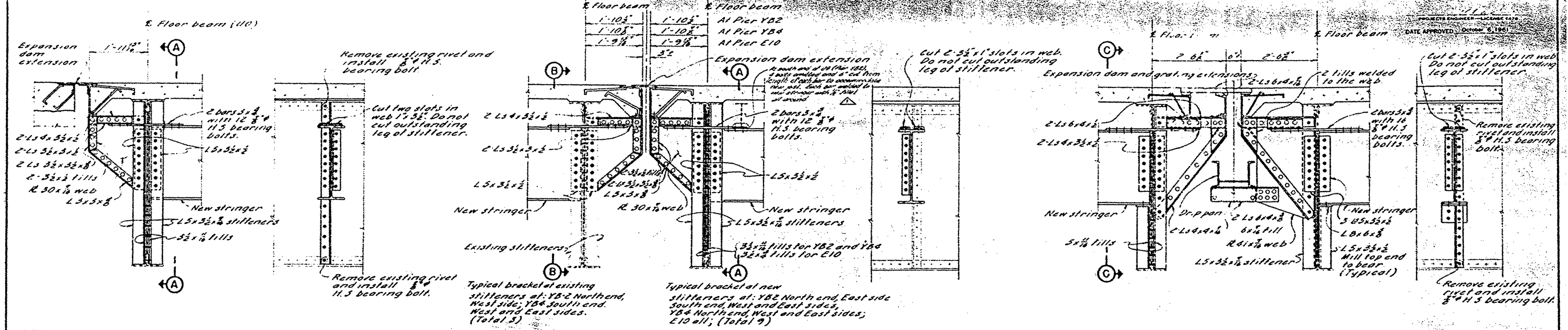
EXPANSION DAM EXTENSIONS

MARK	DATE	DESCRIPTION	BY	CHK
2		As built with revisions		EEF
1	11 62	New plate designation added	EEF	AL
		REVISION		

UNLESS NOTED SCALE 3/4" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET NO 26 | DRAWING C-4030-26R

DATE APPROVED October 6, 1961

DATE APPROVED October 6, 1961
PROJECTS ENGINEER—LICENSE 1476



NEW EXPANSION BRACKET AT YB1
(South side only)

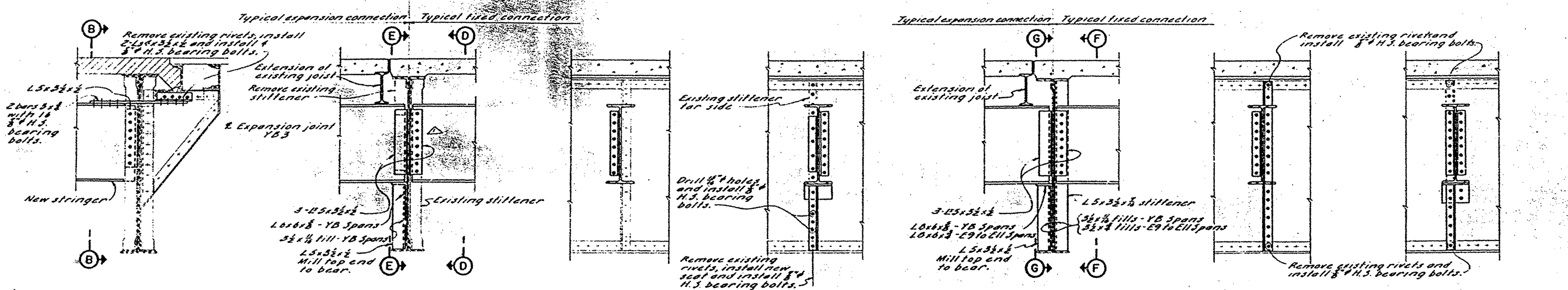
SECTION A-A

NEW EXPANSION BRACKETS AT YB2, YB4 AND E10
(North and South side)

SECTION B-B

NEW EXPANSION BRACKET AT YB3
(North side only)

SECTION C-C



SOUTH EXPANSION BRACKET AT YB3
(Work at West side similar Total 2)

AT EXISTING STIFFENERS

SECTION D-D

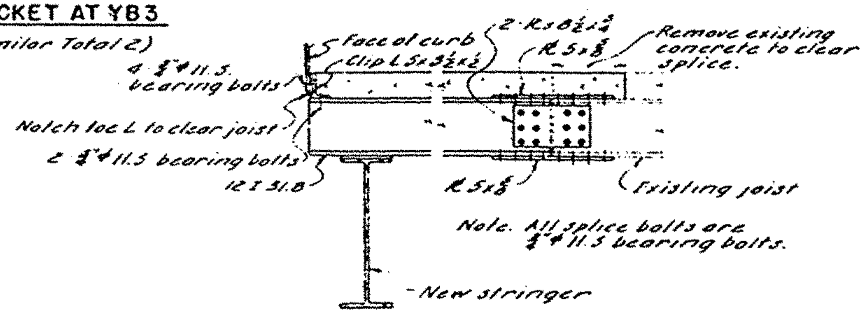
SECTION E-E

AT NEW STIFFENERS

SECTION F-F

SECTION G-G

NEW STRINGER CONNECTIONS



EXTENSION OF EXISTING JOIST
(At Floor beams 14, U13, U22 and U31, YB Spans; and U4, Spans E9 to E11)

NOTES

1. All new rivets to be 7/8"ϕ.
2. All new field connections to be 7/8"ϕ H.S. bearing bolts unless noted.
3. For expansion dam extensions see Sheet No. 26.
4. For work on drip pan at YB3 see Sheet No. 45.
5. New stringer end connections to floor beams to be 4 feet (±6") from ℄ Truss at YB Spans, and 5 feet (±3") from ℄ Truss at E9-E11 Spans. Existing stiffener angles may be used for stringer connections if feasible and practical.
6. For location of joist extensions see Sheet Nos. 16, 17, 18, 19 and 25.
7. For sizes of new stringers see Sheet Nos. 6 and 11.
8. For as-built record see shop drawings

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
1	11-63	As built with revisions	L.L.S	EEF
REVISION				

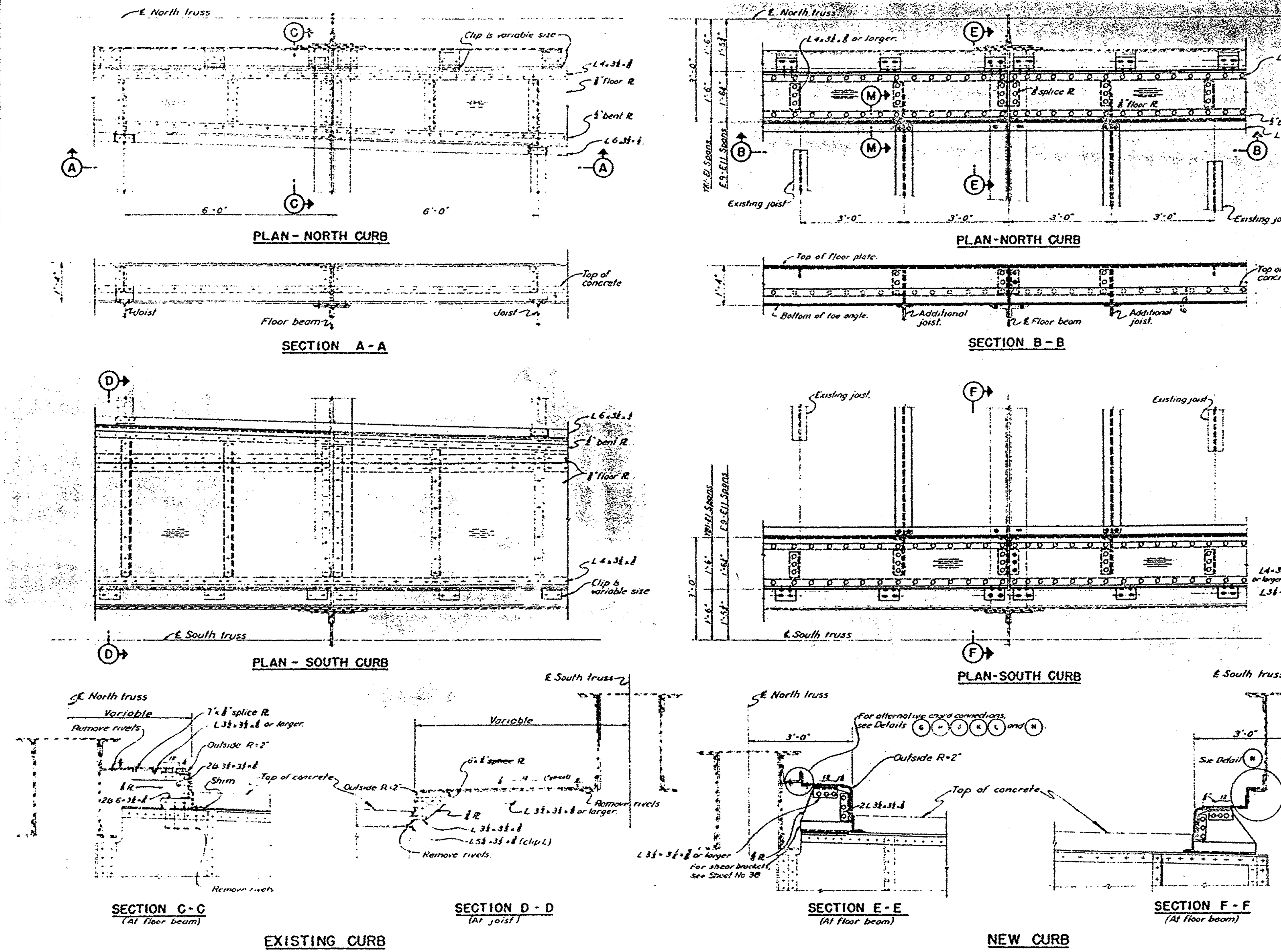
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

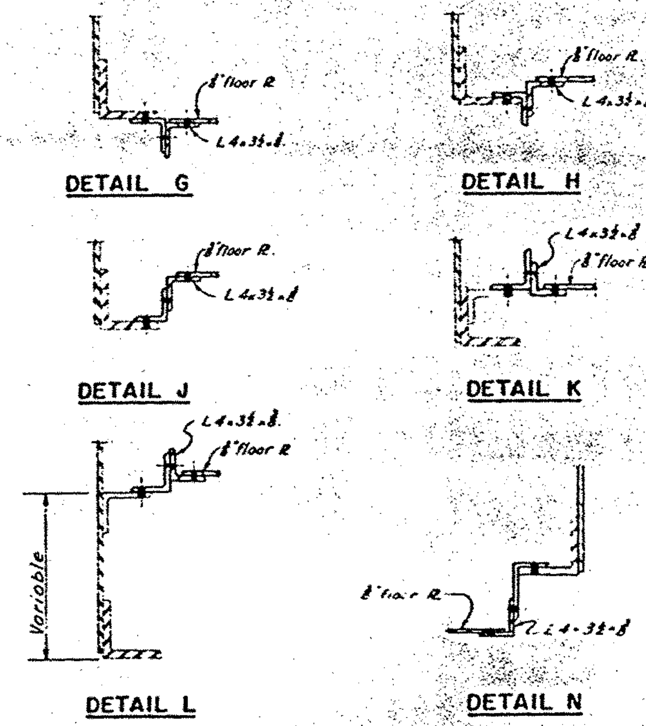
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

STEEL WORK- DECK WIDENING

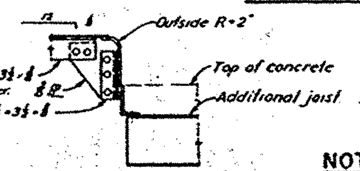
SCALE 3/4"=1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 27 | DRAWING C-4030-27R

APPROVAL RECOMMENDED BY.





ALTERNATIVE CHORD CONNECTIONS
Scale: 1½" = 1'0"



SECTION M-M
Typical curb detail at additional joist.

NOTES

1. All shop rivets ⅞"⌀, countersunk heads not over ⅛" high
2. All field connections of floor plate and of bent curb plate ¾"⌀ flat head bolts except as noted.
3. For curb to chord connections use either ⅜" bent plates or clip angles and ¾"⌀ machine bolts except for existing 1⅛"⌀ holes use 1"⌀ machine bolts.
4. For curb to floor beam and curb to joist connections use ⅞"⌀ machine bolts.
5. Deck slab concrete is omitted on all plan views
6. Details (G) (H) (J) (K) (L) and (N) show various connections between curb and chord.

⚠1 ? for as-built record see shop drawings

SCALE IN INCHES (0 1 2 3 4)

MARK	DATE	DESCRIPTION	BY	CH'K
1	?/65	As built with revisions	L.L.S.	EEF

REVISION

PROJECTS ENGINEER — LICENSE 1478
DATE APPROVED October 6, 1961

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

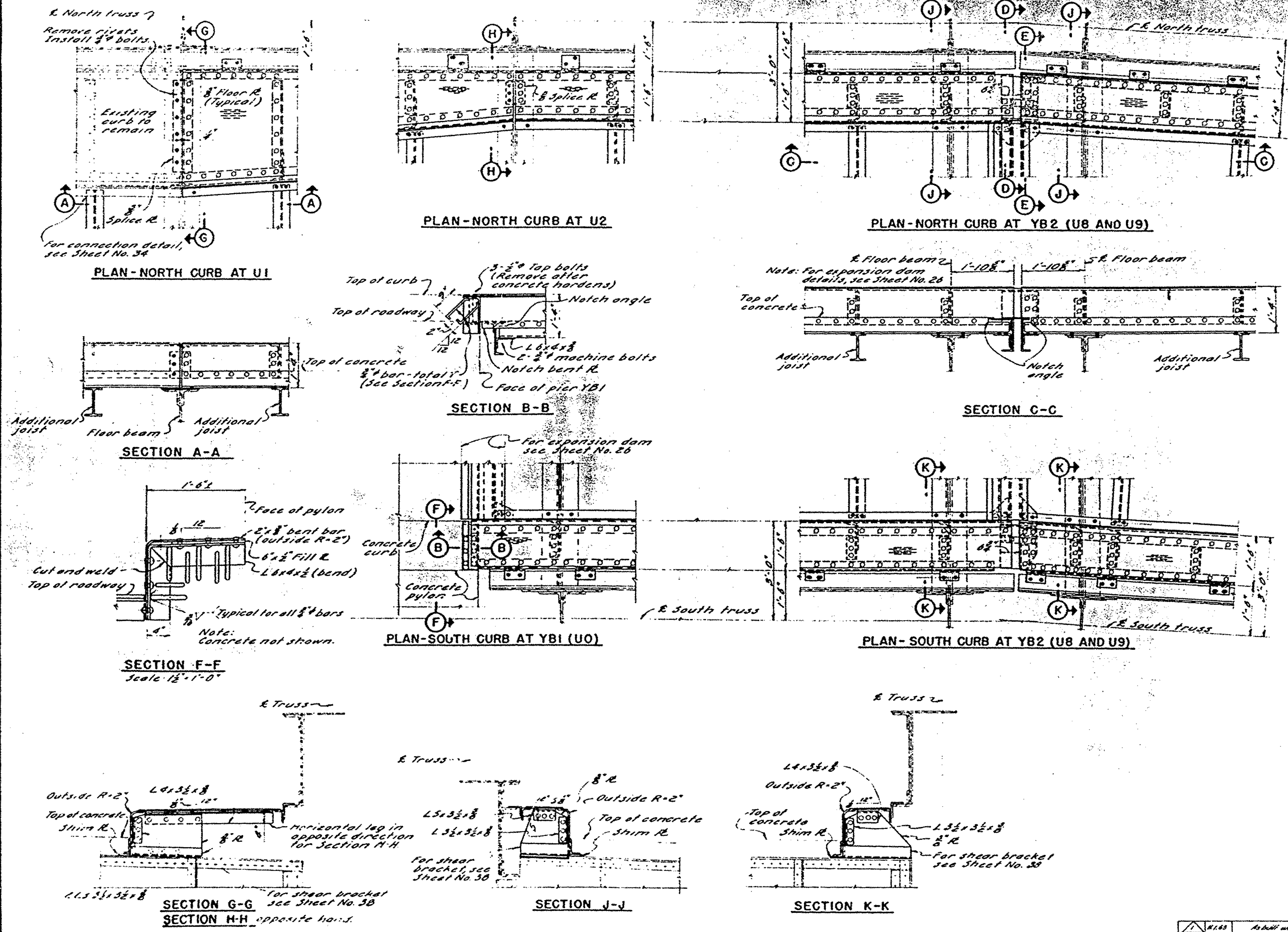
**SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY**

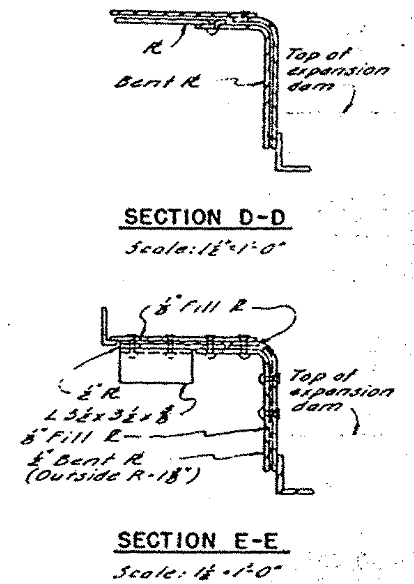
YB1-E1 AND E9-E11 TYPICAL CURB DETAILS

UNLESS NOTED SCALE ¾" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 28 | DRAWING C-4030-28

APPROVAL RECOMMENDED BY

PROJECTS ENGINEER—LICENSE 1479
DATE APPROVED October 6, 1961





NOTES

1. Notes 1 to 6 on Sheet No. 28 apply.

△ 2 For as-built record see shop drawings

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

YB1-YB2 CURB DETAILS

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.1.63	As built with revisions	A.L.S.	EEF

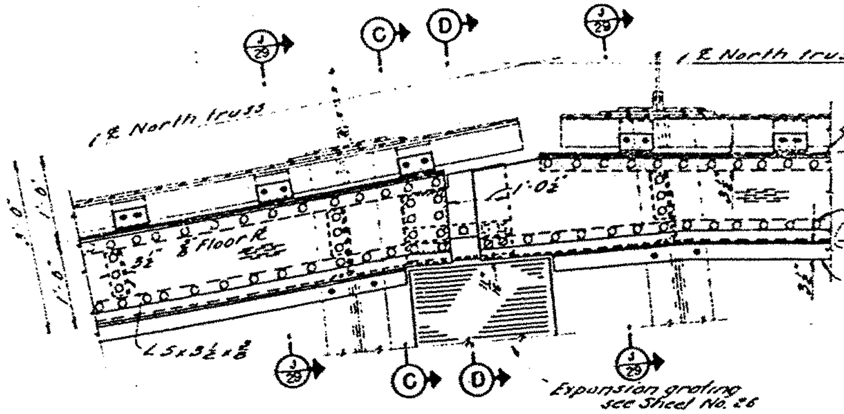
REVISION

UNLESS NOTED SCALE 3/4" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No 29 | DRAWING 4030 29R

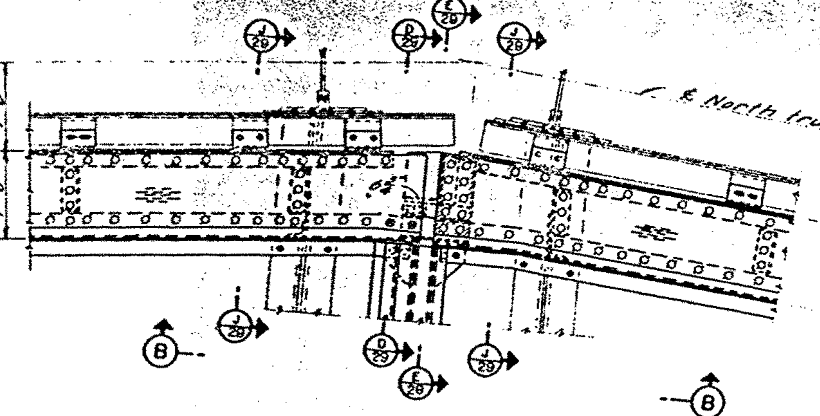
APPROVAL RECOMMENDED BY [signature] SUPERVISING BRIDGE ENGINEER LICENSE 2157

PROJECTS ENGINEER — LICENSE 1479

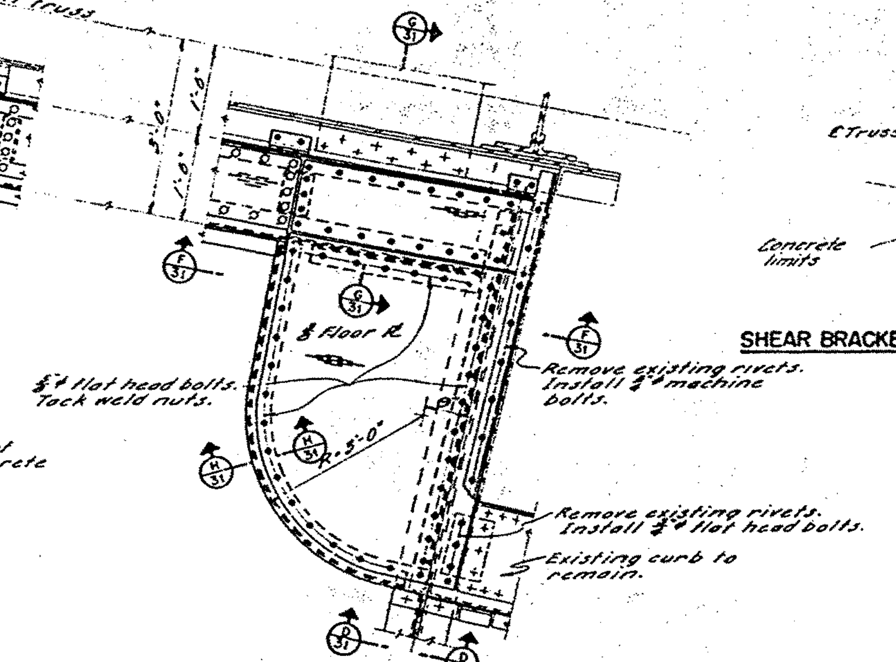
DATE APPROVED October 6, 1961



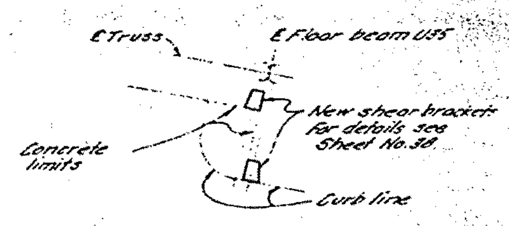
PLAN - NORTH CURB AT YB3



PLAN - NORTH CURB AT YB4

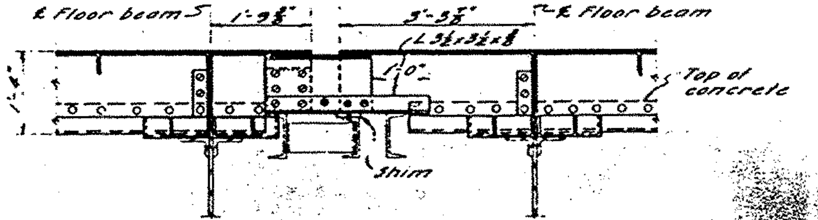


PLAN - NORTH CURB AT E1 (U35)

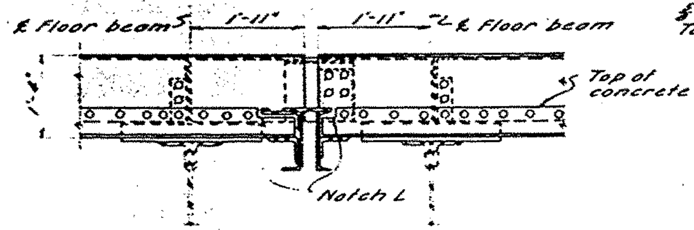


SHEAR BRACKET LAYOUT - E1(U35) NORTH

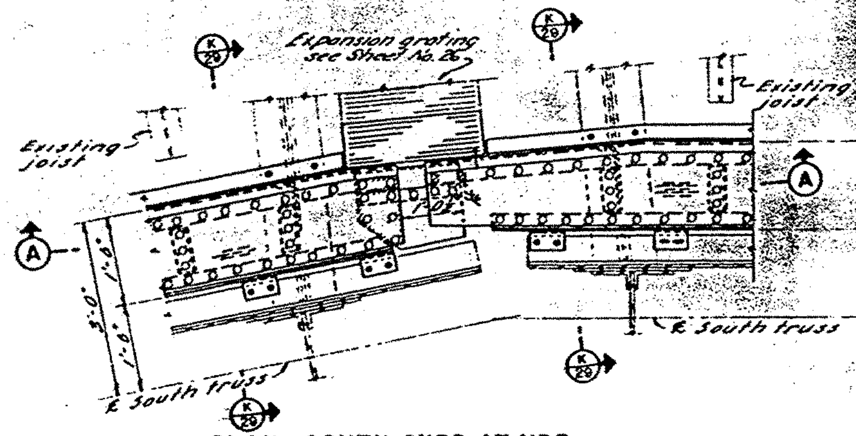
No Scale



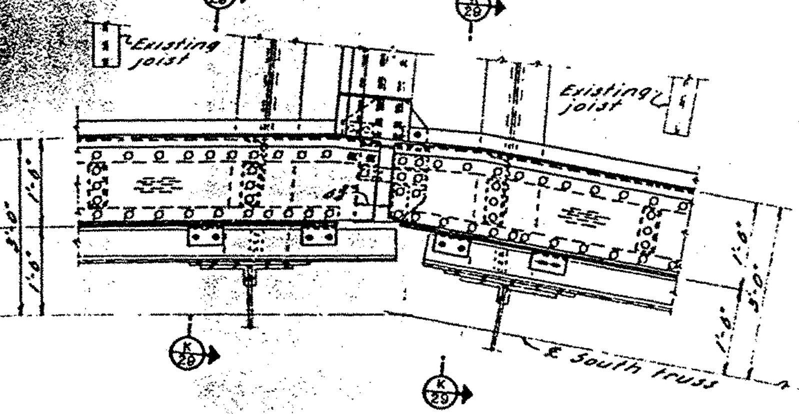
SECTION A - A



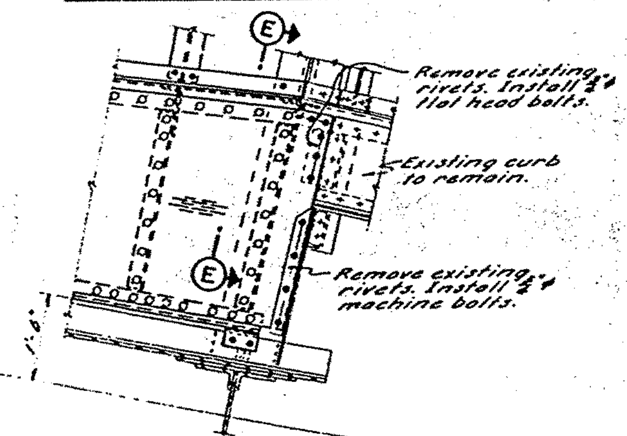
SECTION B - B



PLAN - SOUTH CURB AT YB3



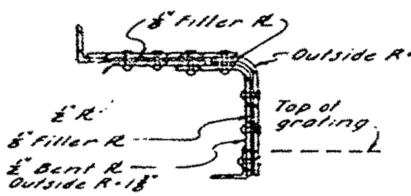
PLAN - SOUTH CURB AT YB4



PLAN - SOUTH CURB AT E1 (U35)

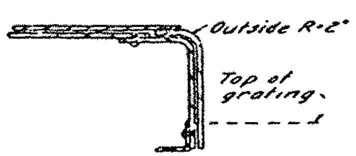
NOTES

1. Notes 1 to 6 on Sheet No. 28 apply.
2. For material not called out, see Sheet No. 28.
3. For as-built record see shop drawings



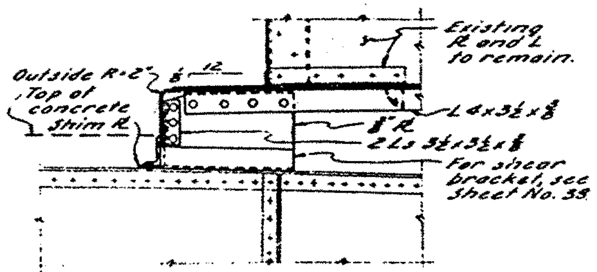
SECTION C - C

Scale 1½" = 1'-0"



SECTION D - D

Scale: 1½" = 1'-0"



SECTION E - E

8 THS — 10 THS — SCALE IN INCHES

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER LICENSE 1167

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN AND DETAILS REVIEWED BY

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.1.63	As built with revisions		EEF
		REVISION		

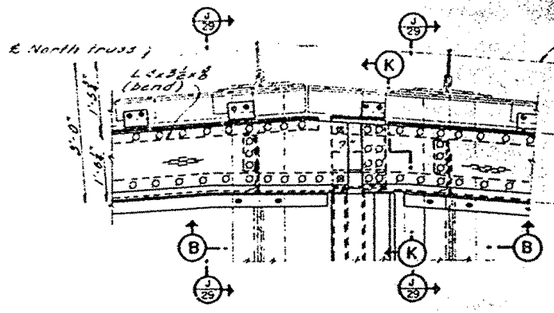
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

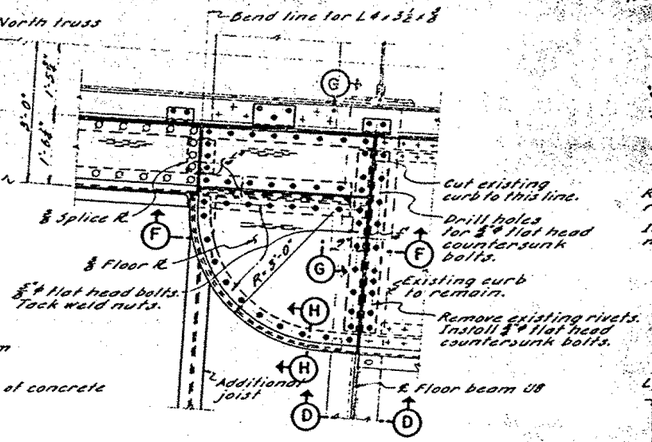
YB3 - E1 CURB DETAILS

UNLESS NOTED SCALE 3/4" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 30 | DRAWING C-4030-30R

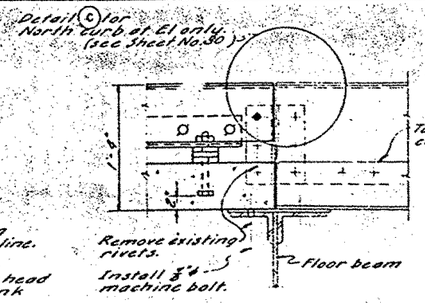
SHEAR BRACKET LAYOUT- E11 NORTH
Similar at E11 South
No Scale



PLAN - NORTH CURB AT E10

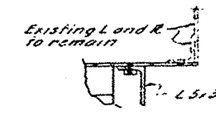


PLAN - NORTH CURB AT E11

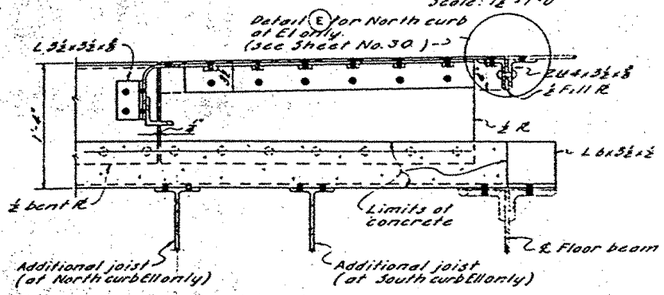


DETAIL C
Scale: 1½"=1'-0"

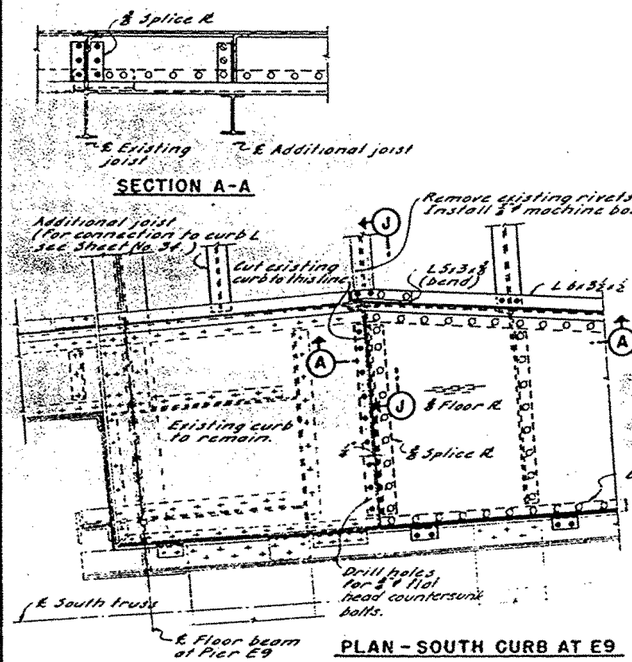
SECTION D-D
Scale: 1½"=1'-0"



DETAIL E
Scale: 1½"=1'-0"

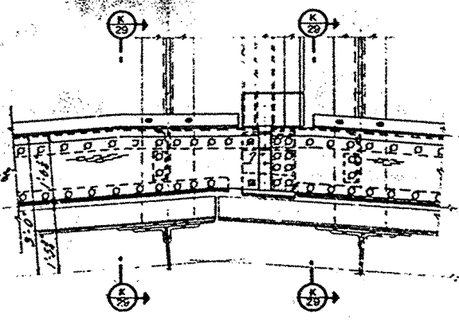


SECTION F-F
Scale: 1½"=1'-0"

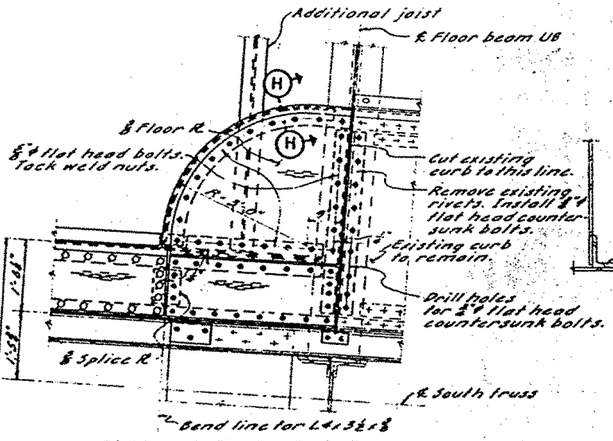


SECTION A-A

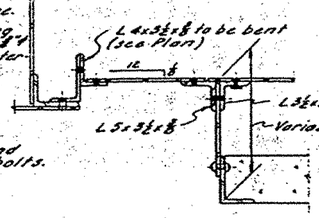
PLAN - SOUTH CURB AT E9



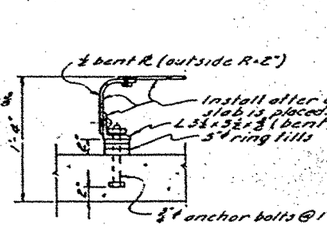
PLAN - SOUTH CURB AT E10



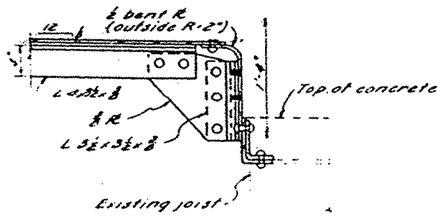
PLAN - SOUTH CURB AT E11



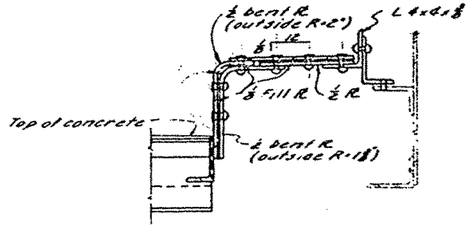
SECTION G-G
Scale: 1½"=1'-0"



SECTION H-H
Scale: 1½"=1'-0"



SECTION J-J
Scale: 1½"=1'-0"



SECTION K-K
Scale: 1½"=1'-0"

NOTES

1. Notes 1 to 6 on Sheet No. 28 apply.
2. For material not called out, see Sheet No. 28.
3. ⚠ for as-built record see shop drawings

8 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

MARK	DATE	DESCRIPTION REVISION	BY	CHK
1	8-63	As built with revisions	A.L.S.	E.E.F.

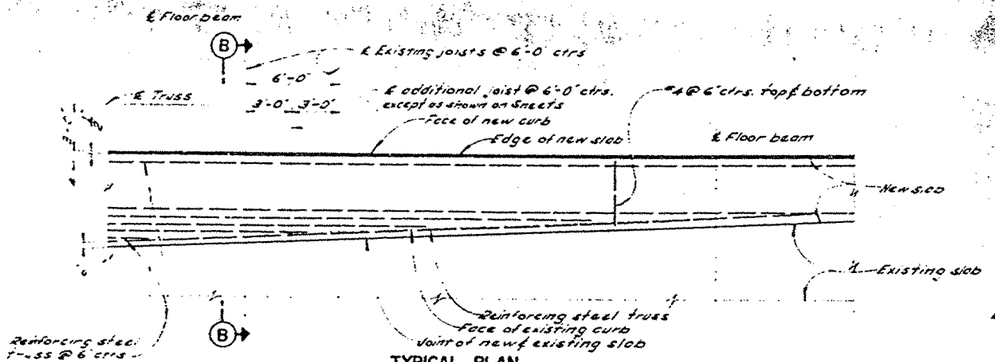
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

E9 - E11 CURB DETAILS

UNLESS NOTED | 33-25 34-03 34-04 | SHEET NO 31 | DRAWING C-4030-31R
SCALE 3/4"=1'-0" | BRIDGE

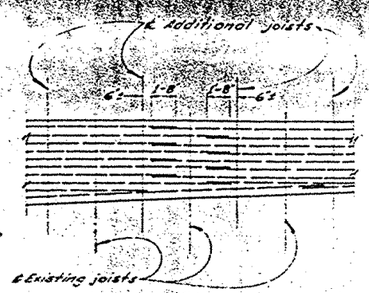
APPROVAL RECOMMENDED BY
PROJECTS ENGINEER - LICENSE DATE
DATE APPROVED October 6, 1961



TYPICAL PLAN

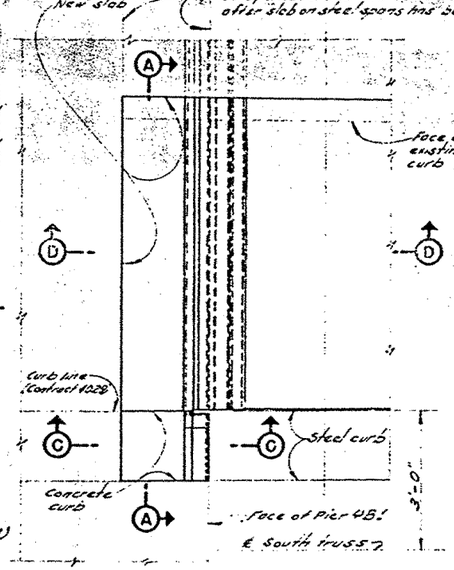
North side shown. South side opposite hand.

Scale: $\frac{1}{4}$"=1'-0"



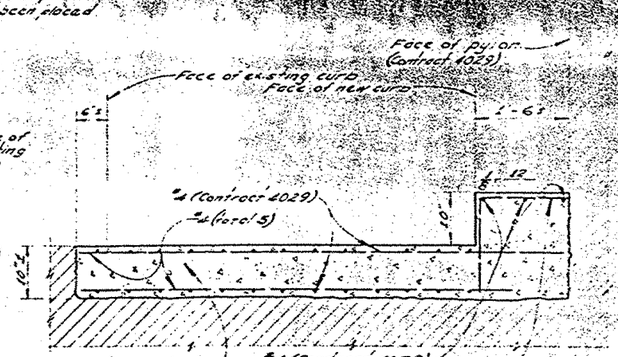
REINFORCING STEEL TRUSS SPLICES

Scale: $\frac{1}{4}$"=1'-0"



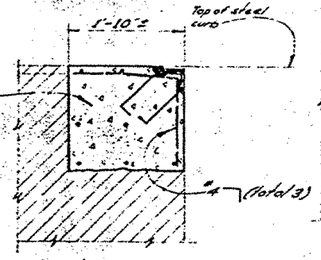
PLAN SOUTHSIDE-YBI

Scale $\frac{3}{8}$"=1'-0"



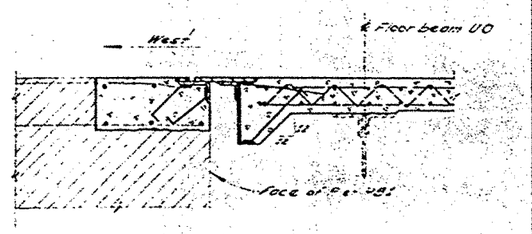
SECTION A-A

Scale: 1"=1'-0"

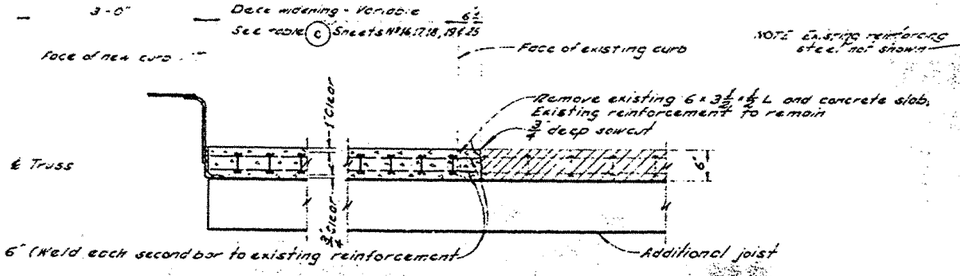


SECTION C-C

Scale: 1"=1'-0"



SECTION D-D

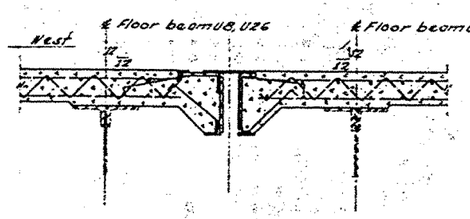


SECTION B-B

Scale: 1"=1'-0"

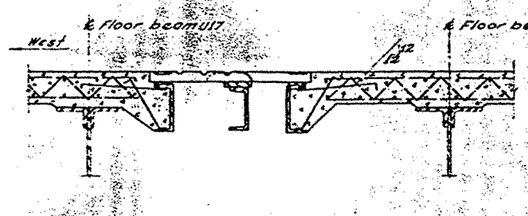
SECTION D-D
SLAB DETAIL AT YBI

Scale: 1"=1'-0"



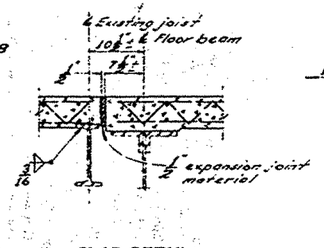
SLAB DETAIL AT YB2 & YB4

Scale: 1"=1'-0"



SLAB DETAIL AT YB3

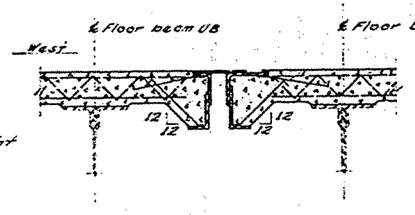
Scale: 1"=1'-0"



SLAB DETAIL

Scale 1"=1'-0"

U4, U13, U22, U31 (YBI-E1 Spans)
U4 (E9-E10 Span)
U4 (E10-E11 Span)

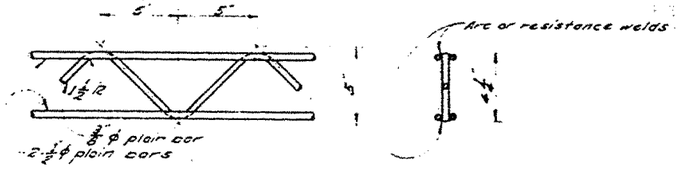


SLAB DETAIL AT E10

Scale: 1"=1'-0"

NOTES

1. For details of expansion dams see sheet No 26
2. All new concrete shall be light weight Class L
3. Reinforcing steel trusses shall be fabricated from plain bars. All other reinforcing steel shall be deformed bars.
4. For as-built record see shop drawings.



DETAIL-REINFORCING STEEL TRUSS

Scale: 3"=1'-0"

8 THS 0 1 2 3 10 THS

SCALE IN INCHES

APPROVAL RECOMMENDED BY:

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

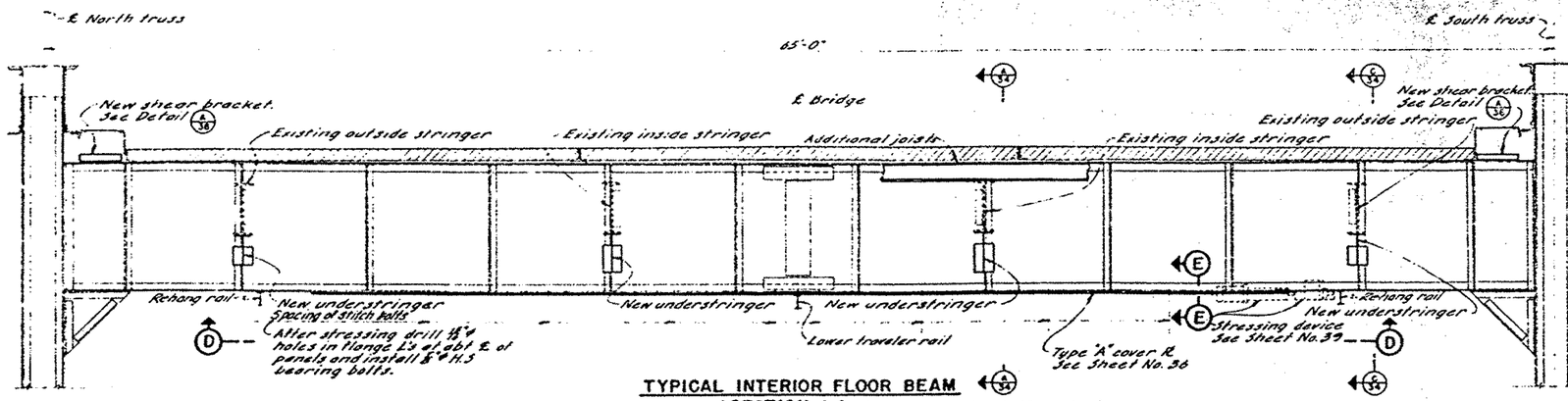
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

YBI-EI AND E9-EII SLAB DETAILS

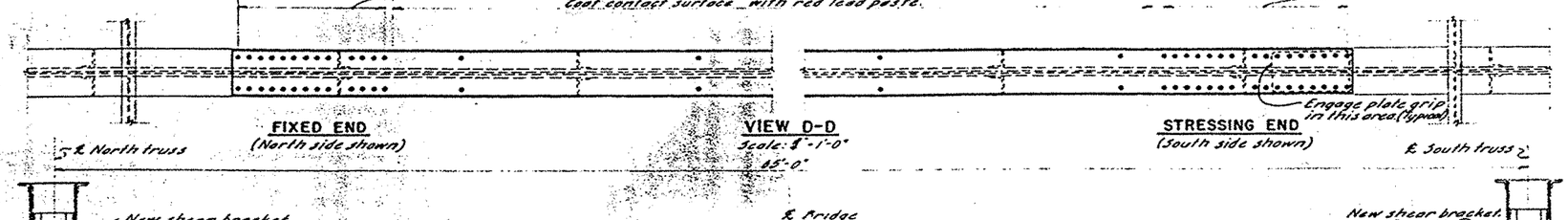
MARK	DATE	DESCRIPTION REVISION	BY	CHK
1	11.1.63	As built with revisions	GB	EEF

SCALE AS SHOWN | BRIDGE 53-25 54-C5 54-04 | SHEET NO. 32 | DRAWING 4030-328

PROJECT ENGINEER - LICENSE 1670
DATE APPROVED October 6, 1961



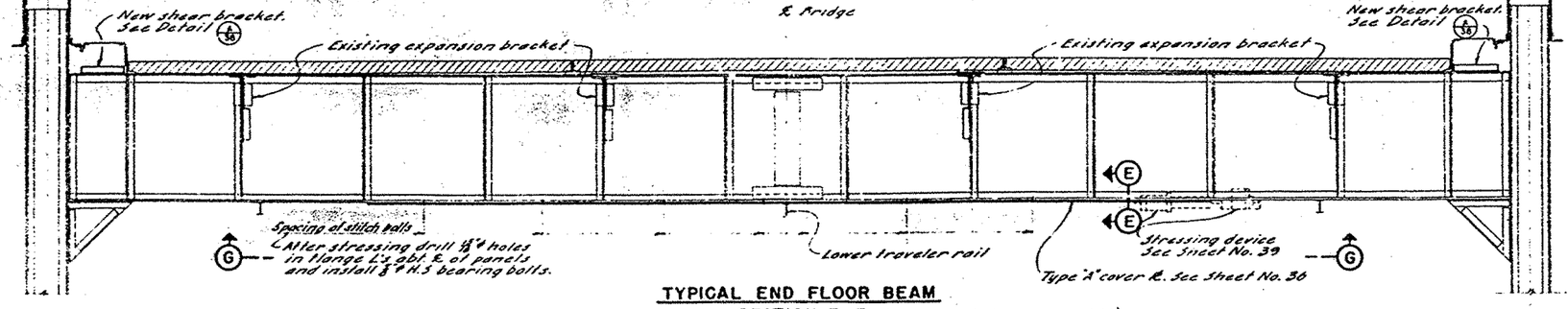
TYPICAL INTERIOR FLOOR BEAM
SECTION A A (See Sheet No. 12, 13 and 14)
(Floor beams at U1 through U7, in spans from pier E11 to pier E23)
Scale: 1/4"=1'-0"



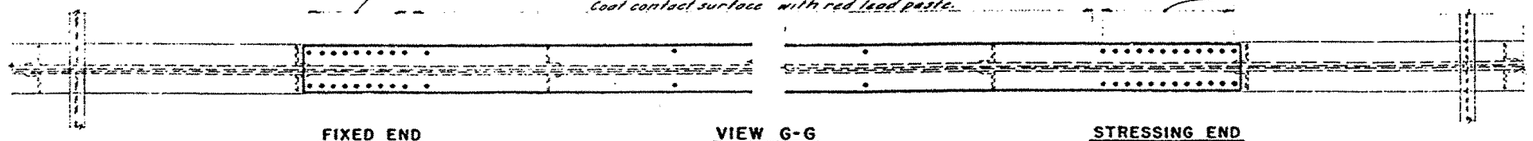
FIXED END
(North side shown)

VIEW D-D
Scale: 3/8"=1'-0"

STRESSING END
(South side shown)



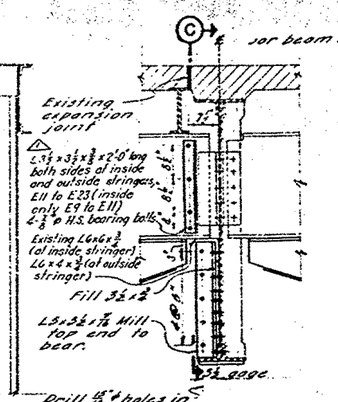
TYPICAL END FLOOR BEAM
SECTION F-F (See Sheet No. 12, 13 and 14)
(Floor beam at U0 and at U8 in spans from Pier E11 to Pier E23)
Scale: 3/8"=1'-0"



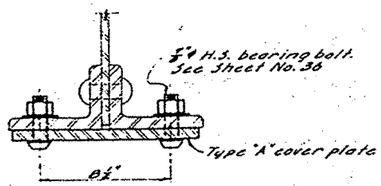
FIXED END
(North side shown)

VIEW G-G
Scale: 3/8"=1'-0"

STRESSING END
(South side shown)



STRINGER SEAT STRENGTHENING
DETAIL B
(At interior expansion joints only; E9 to E23)
Scale: 3/4"=1'-0"



SECTION E-E
Scale: 3"=1'-0"

NOTES

1. For erection procedure of cover plates see Sheet No. 20.

8 THS 0 1 2 3 10 THS 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

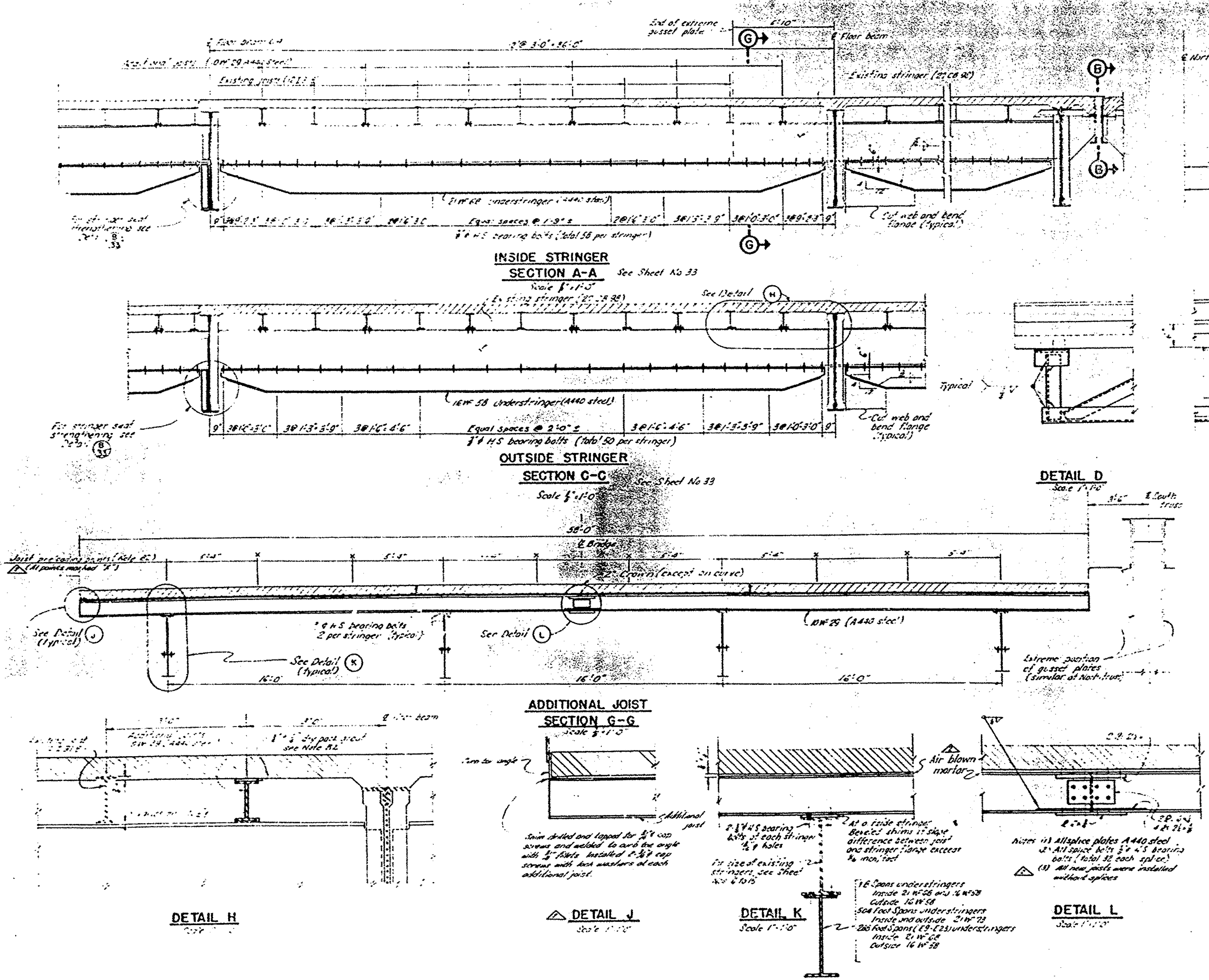
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

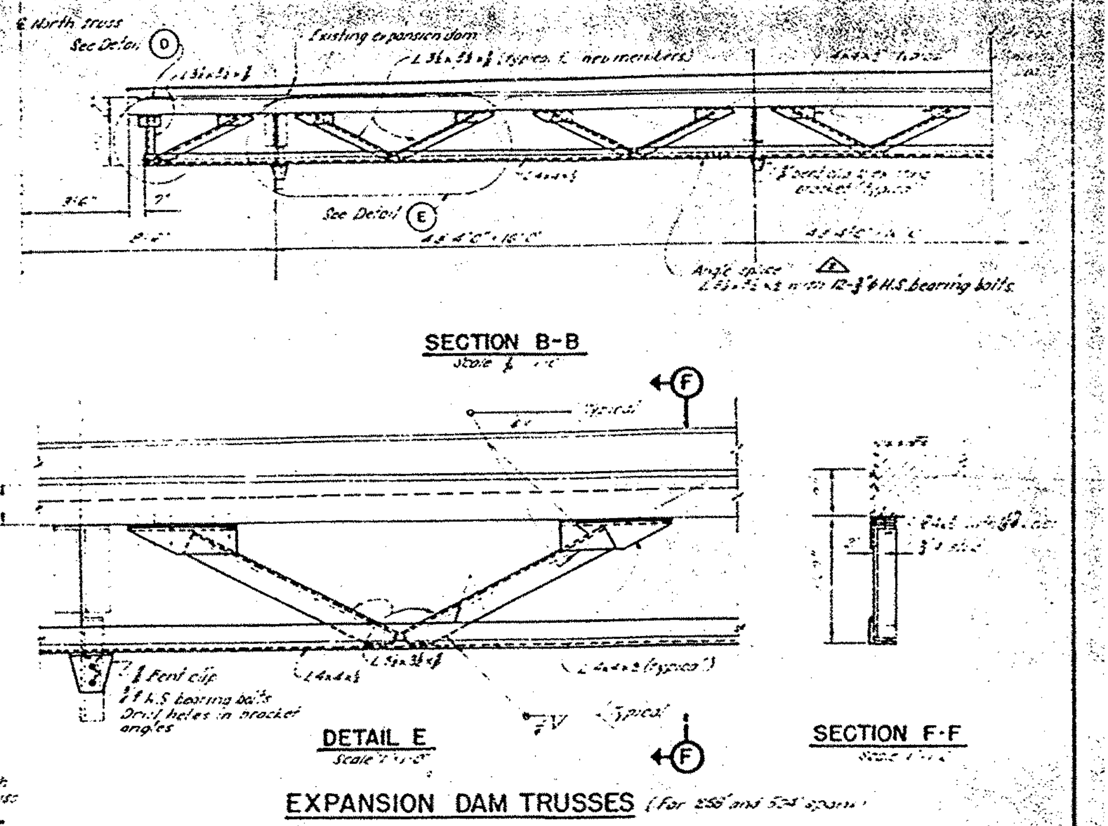
288 FOOT SPANS - FLOOR BEAMS

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.1.63	As built with revisions	DB	EEF
		REVISION		

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET No 33 | DRAWING 40330-33R

APPROVAL RECOMMENDED BY.....
DISTRICT BRIDGE ENGINEER
LICENSE 7187





EXPANSION DAM TRUSSES (For 288' and 504' spans)

ERECTION PROCEDURE

A Understringers:
1 Drill first eight flange holes at each end of existing stringers and bolt understringers through these holes before drilling and bolting remaining holes.
2 Rolled understringers shall be placed with the natural camber upward.
3 ⅞ inch diameter H.S. bearing bolts in 15/16 inch diameter holes shall be used for all field connections.

B Additional Joists
1 Clean underside of concrete deck as specified.
2 Erect joist. In lieu of using one center splice, as shown, the Contractor may erect joists either in one piece or with two splices of [illegible] and in locations approved by the Engineer. In any event one splice will be used for computing pay weights.
3 Place shims on stringers of such thickness that the gap between concrete and joist will average about ¾ inches, with a maximum of one inch and a minimum of ½ inch. Drill holes in top flange of stringer, place ⅞ ϕ H.S. bearing bolts (Detail K), install studs and shims at curb [illegible].
4 Preload joist against the deck with 500 lbs at each and all points shown on Section C-C by wedging, jacking or screwing as approved by the Engineer.
5 After keeping the contact areas of the concrete wet as specified fill the gap with air blown mortar continuously and tightly.
6 When the mortar has attained a strength of not less than [illegible] remove preload [illegible] nuts at curb [illegible].

C Expansion Dam Trusses
1 All welded connections shall be ¼ inch all around fillet welds.
2 All connections to existing expansion dams shall be ¾ inch full base, threaded studs (Nelson HF or equal).

SCALE IN INCHES

DATE APPROVED October 6, 196[illegible]

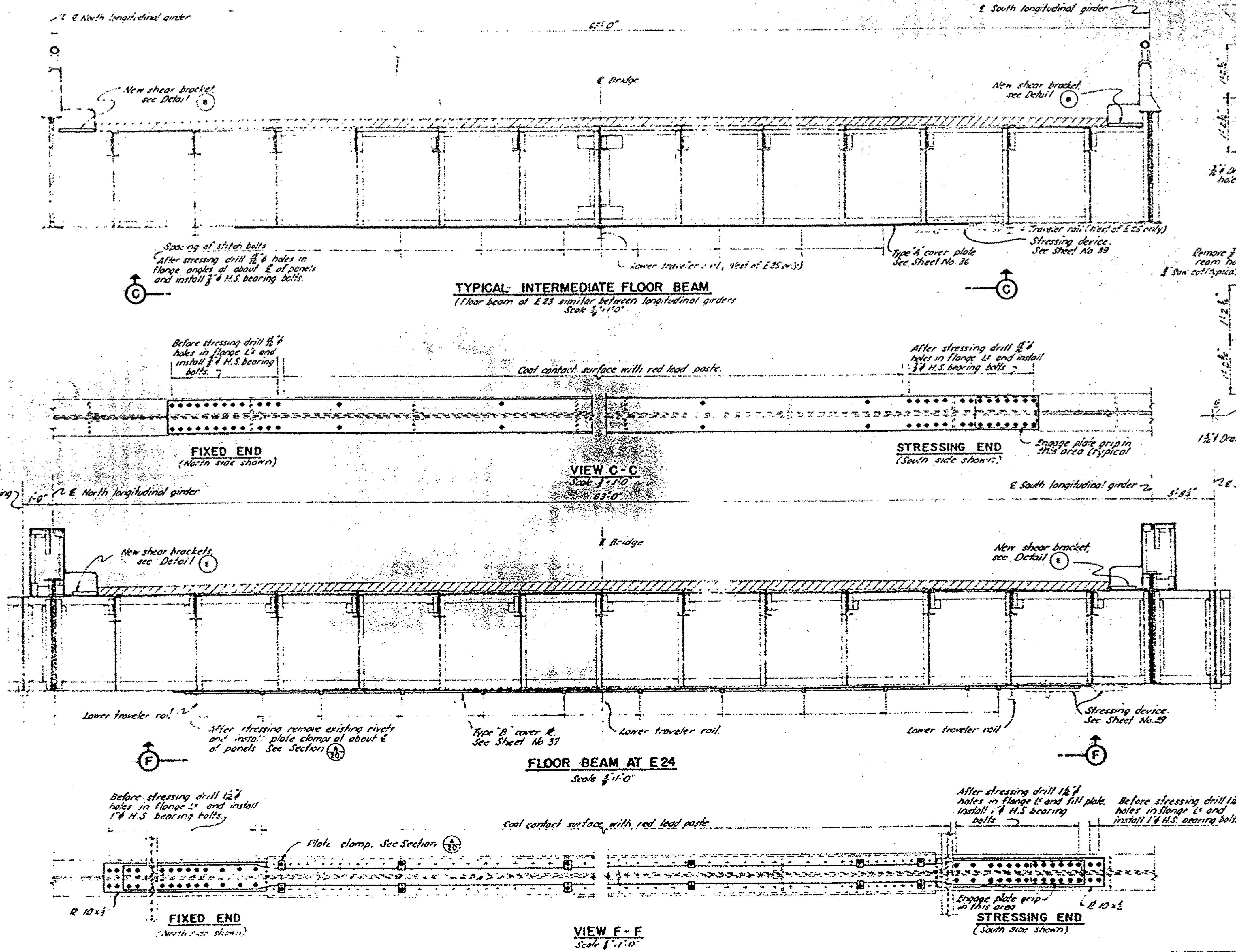
SUPPLEMENTAL CONTRACT DRAWING

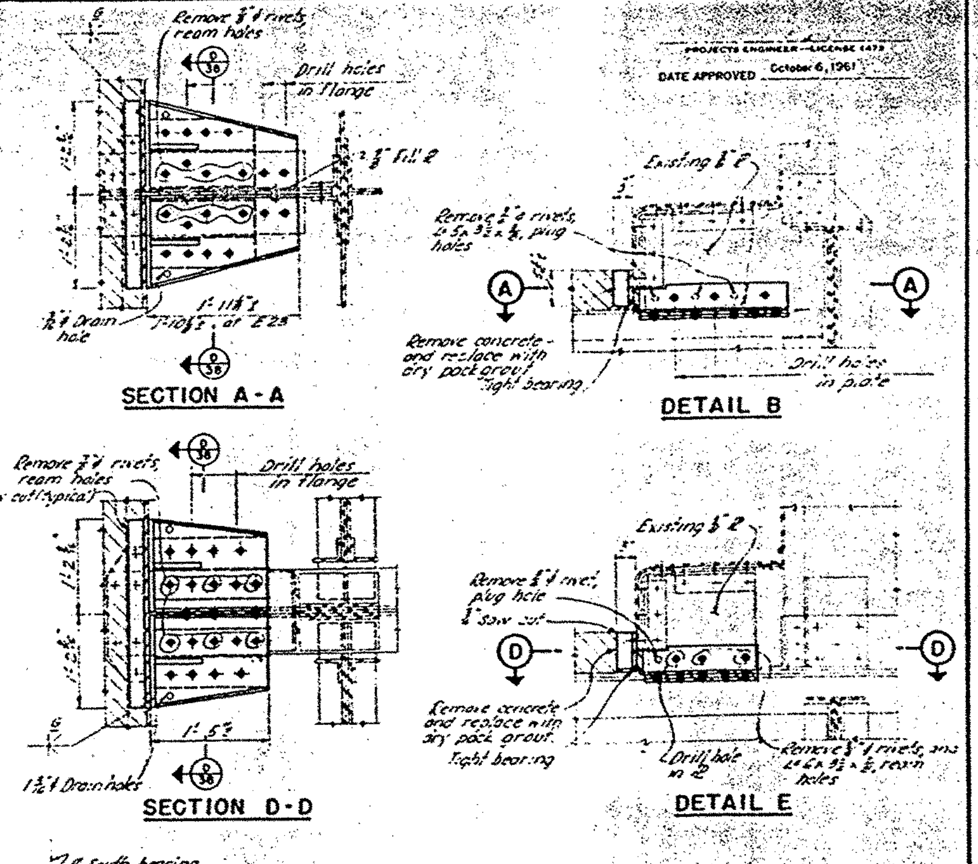
MARK	DATE	DESCRIPTION	BY	CH'K
2	[illegible]	As built with revisions	[illegible]	EEF
1	1.11.62	B2 note changed	EEF	[illegible]
		REVISION		

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

288 FOOT SPANS - STRINGERS AND JOISTS

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No 34 | DRAWING [illegible] 34 R





SHEAR BRACKETS
Scale 1"=1'-0"

PROJECTS ENGINEER — LICENSE 1473
DATE APPROVED October 6, 1961

NOTES

1. For erection procedure of new cover plates see Sheet No 20.
2. Floor beams of the piers 25 thru 33 do not require strengthening under this contract.
3. For notes and erection procedure of shear brackets see Sheet No. 38.
4. (Revision 1) For as-built record of shear brackets see shop drawings.

0 THS — 10 THS — 0 1 2 3 4 — SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.63	As built with revisions	L.L.S.	E.E.F.
REVISION				

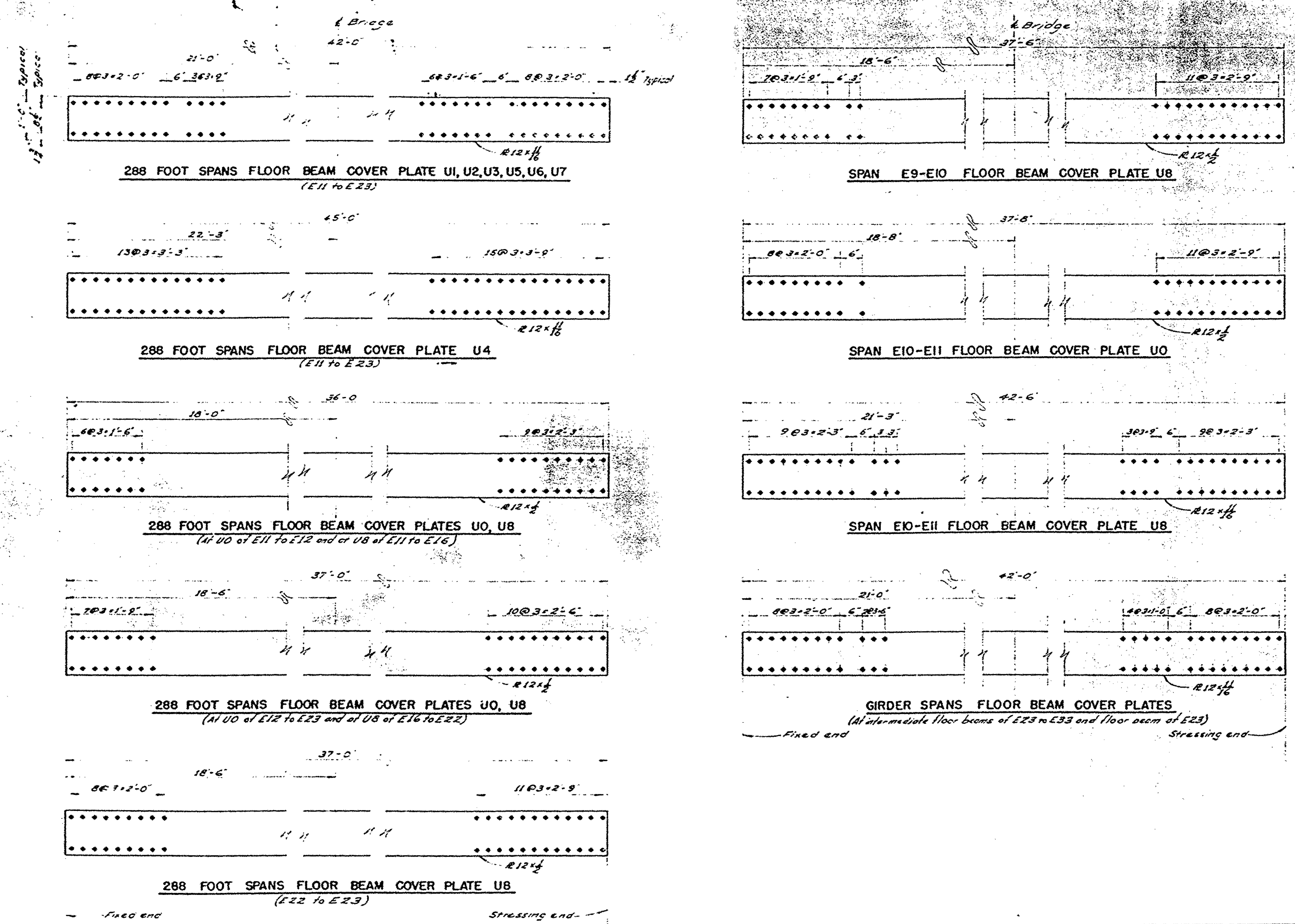
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

GIRDER SPANS — FLOOR BEAMS

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 35 | DRAWING C-4030-35

APPROVAL RECOMMENDED BY



PROJECTS ENGINEER — LICENSE 1479

DATE APPROVED October 6, 1961

NOTES

1. All cover plates shall be T1 steel.
2. One butt welded splice is permitted on 11/16 plates only, at not less than 1'-0" from holes.
3. All holes for type "A" cover plates shall be 15/16 ϕ.
4. For location of holes for stiffer bolts see Sheets No. 33 and 35
5. For panel point designations (eg U1, U2) see Plan and Elevation Sheets No. 6-15.

8 THS — 10 THS — SCALE IN INCHES

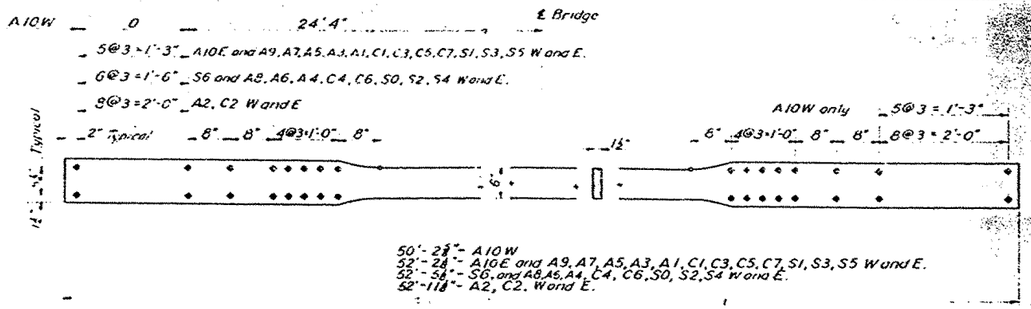
MARK	DATE	DESCRIPTION	BY	CH'K
△	11.1.63	As built without revisions	CB	EEF
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

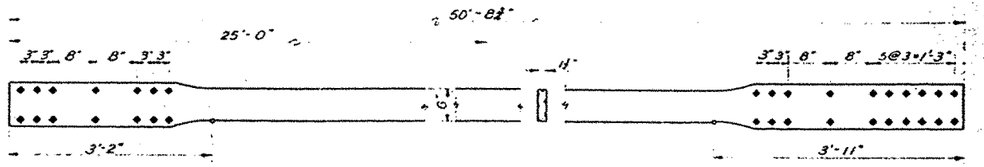
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

TYPE "A" COVER PLATES

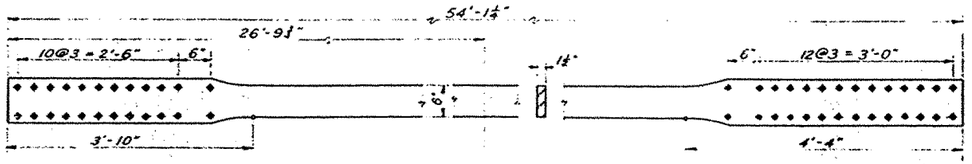
SCALE 1"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No 36 | DRAWING No ...



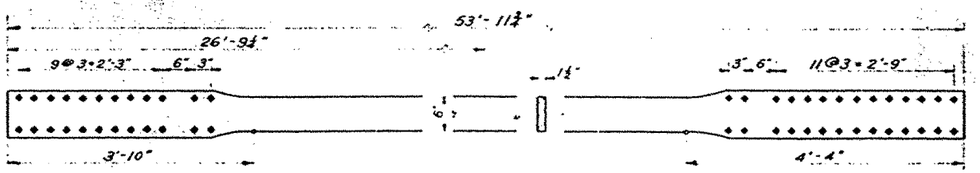
CANTILEVER STRUCTURE FLOOR BEAM COVER PLATES



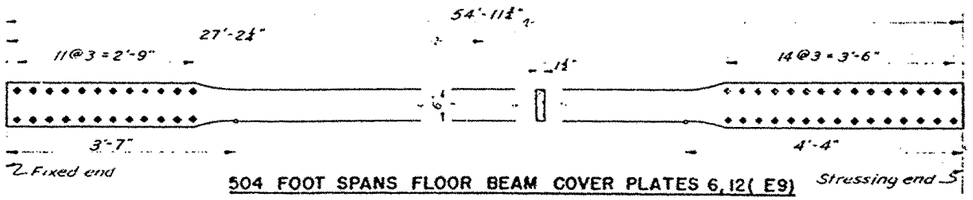
504 FOOT SPANS FLOOR BEAM COVER PLATES 0, 12



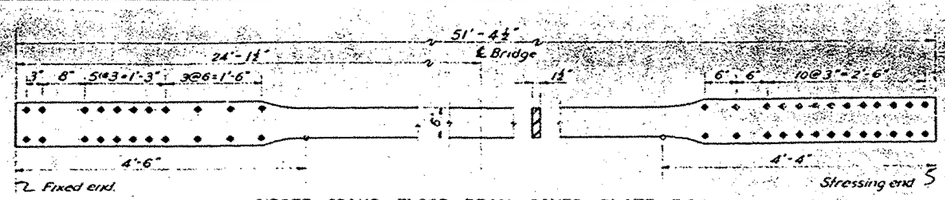
504 FOOT SPANS FLOOR BEAM COVER PLATES 2, 4, 8, 10



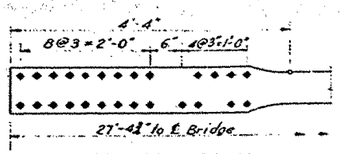
504 FOOT SPANS FLOOR BEAM COVER PLATES 1, 3, 5, 7, 9, 11



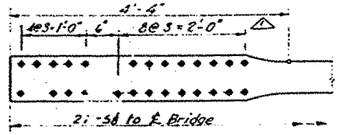
504 FOOT SPANS FLOOR BEAM COVER PLATES 6, 12 (E9)



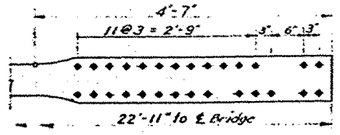
GIRDER SPANS FLOOR BEAM COVER PLATE E 24



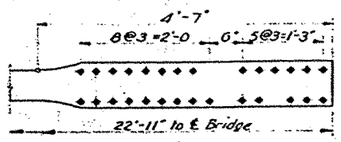
SPAN YB1 - YB2, U4
(Fixed end)



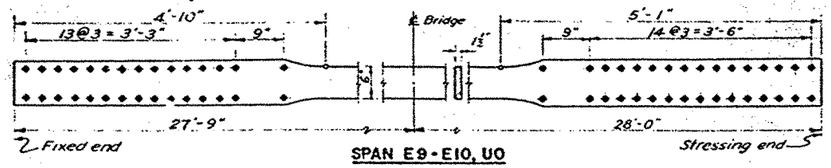
SPAN YB2 - YB3, U11
(Fixed end)



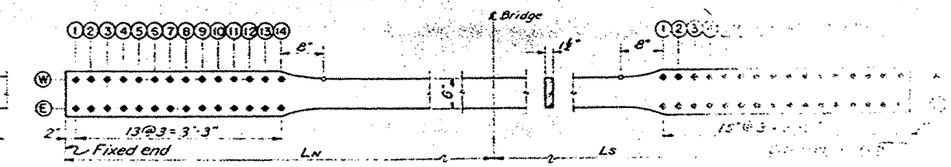
SPAN E9 - E10, U3 AND SPAN E10 - E11, U5
(Stressing end)



SPAN E9 - E10, U5 AND SPAN E10 - E11, U3
(Stressing end)



SPAN E9 - E10, U0



SPAN YB 1 - YB 2

FLOOR BEAM	LENGTH L_N	LENGTH L_S	HOLES OMITTED FIXED END	HOLES OMITTED STRESSING END
U0	27'-11⅛	27'-6	6W - 6E	13W - 13E
U1	27'-5⅞	27'-5	4W - 7E	15W - 15E
U2	27'-2	27'-7	5W - 8E	14W - 14E
U3	27'-2	27'-2	7W - 10E	1W - 1E
U4	27'-4⅜	27'-8	See Detail	1W - 1E
U5	27'-2	27'-7	11W - 14E	1W - 3E
U6	27'-2	27'-4⅜	13W - 13E	3W - 6E
U7	27'-0	27'-4⅜	14W - 14E	5W - 8E
U8	27'-0	27'-4⅜	14W - 14E	8W - 8E

SPAN YB 3 - YB 4 △*

FLOOR BEAM	LENGTH L_N	LENGTH L_S	HOLES OMITTED FIXED END	HOLES OMITTED STRESSING END
U18	27'-1½	27'-2	10W - 5E *	1W - 1E
U19	27'-2	27'-5	12W - 9E	3W - 3E
U20	27'-2	27'-2	* 9W - 2E	1W - 1E
U21	27'-3	27'-6	2W - 2E	10W - 10E
U22	27'-0	27'-6	14W - 14E	8W - 8E
U23	27'-1	27'-5	2W - 2E	10W - 10E
U24	27'-3⅜ *	27'-2	2W - 9E *	1W - 1E
U25	27'-0	27'-4⅜	8W - 11E	2W - 2E
U26	27'-2	27'-2	6W - 6E	1W - 1E

SPAN E 9 - E10 △*

FLOOR BEAM	LENGTH L_N	LENGTH L_S	HOLES OMITTED FIXED END	HOLES OMITTED STRESSING END
U0	27'-9	28'-0	See Detail	See Detail
U1	23'-0	22'-11	14W - 14E	1W - 1E
U2	22'-10	22'-10	12W - 12E	14W - 14E
U3	22'-10	22'-11	8W - 8E	See Detail left
U4	22'-10	22'-10	6W - 6E	10W - 10E
U5	22'-11	22'-11	8W - 8E	See Detail left
U6	22'-10⅛	22'-8	11W - 11E	14W - 14E
U7	23'-0	22'-8⅞	14W - 14E	1W - 1E
U8	TYPE "A" PLATE		See Sheet No. 36*	—

SPAN YB 4 - E 1 △*

FLOOR BEAM	LENGTH L_N	LENGTH L_S	HOLES OMITTED FIXED END	HOLES OMITTED STRESSING END
U27	27'-1	27'-2	6W - 6E	1W - 1E
U28	27'-2	27'-5	12W - 9E	3W - 3E
U29	28'-6¾	27'-2	8W - 8E	1W - 1E
U30	27'-1	27'-7	2W - 2E *	13W - 13E
U31	27'-0	27'-6	14W - 14E	8W - 8E
U32	27'-1	27'-6	2W - 2E *	10W - 10E
U33	27'-0¾	27'-2	2W - 8E *	1W - 1E
U34	27'-0¾	27'-7	12W - 8E	2W - 2E
U35	27'-1	27'-5½	2W - 2E	9W - 9E

SPAN E10 - E11 △*

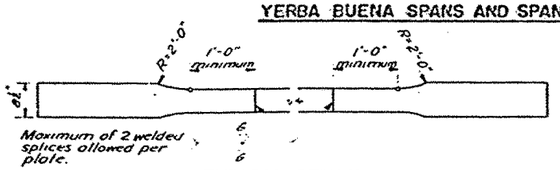
FLOOR BEAM	LENGTH L_N	LENGTH L_S	HOLES OMITTED FIXED END	HOLES OMITTED STRESSING END
U0	TYPE "A" PLATE, See Sheet No 36*			
U1	23'-0	22'-9	14W - 14E	1W - 1E
U2	22'-10	22'-8	11W - 11E	14W - 14E
U3	22'-11	22'-11	8W - 8E	See Detail left
U4	22'-10	22'-10	6W - 6E	10W - 10E
U5	22'-10	22'-11	8W - 8E	See Detail left
U6	22'-10	22'-10	12W - 12E	14W - 14E
U7	23'-0	22'-11	14W - 14E	1W - 1E
U8	TYPE "A" PLATE, See Sheet No 36*			

NOTES

1. All cover plates shall be T-1 steel.
2. Holes for type "A" cover plates shall [illegible]
3. For panel point designations (e.g. [illegible] Elevation, Sheets, No 6 thru [illegible]
4. "Omitted Holes" were drilled with [illegible] grip of outer end of bolt area [illegible] stressing was completed.

△5 * Indicates location [illegible] are changed due to [illegible]

YERBA BUENA SPANS AND SPANS E 9 TO E 11 FLOOR BEAM COVER PLATES



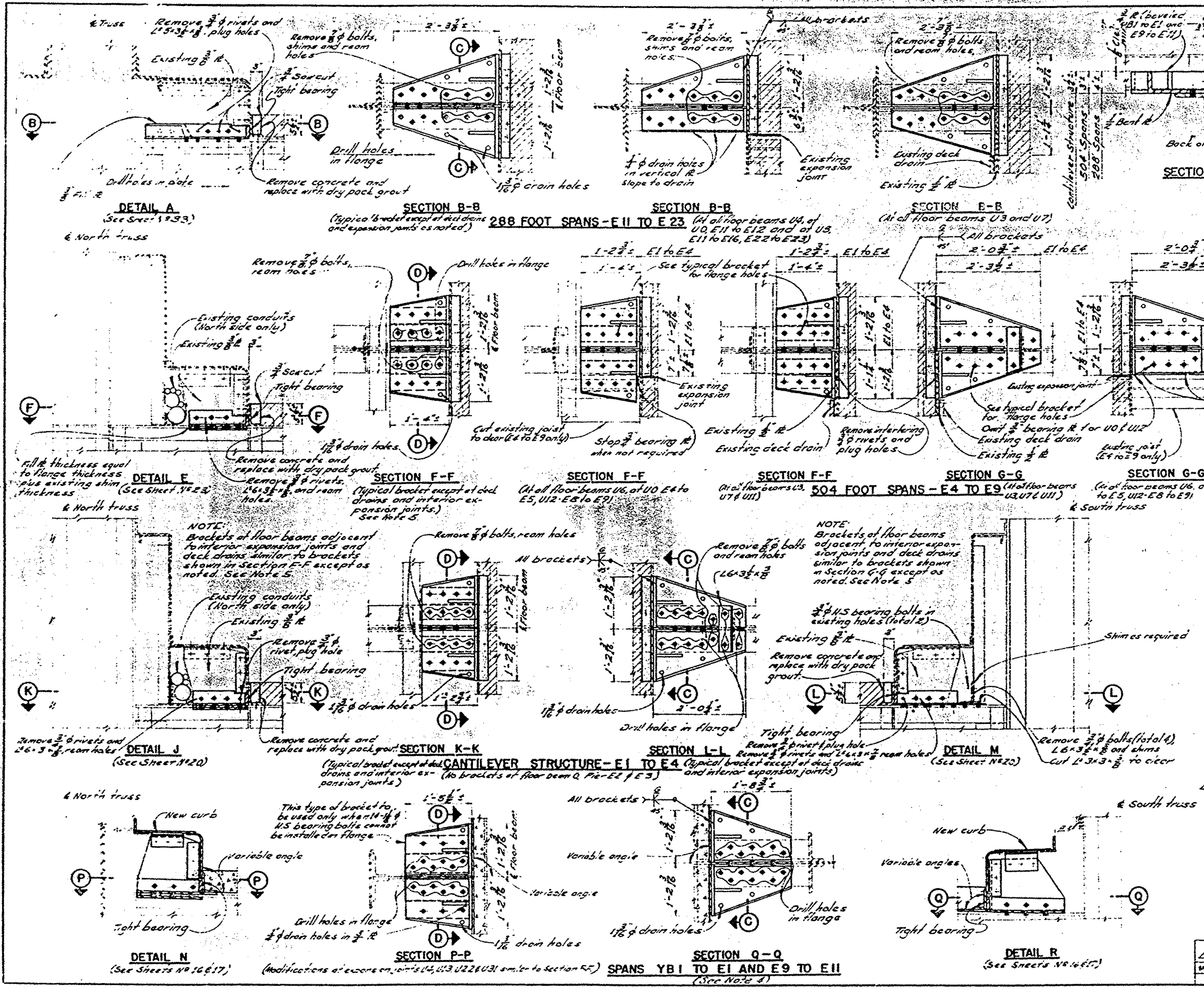
TYPICAL DETAIL
No scale

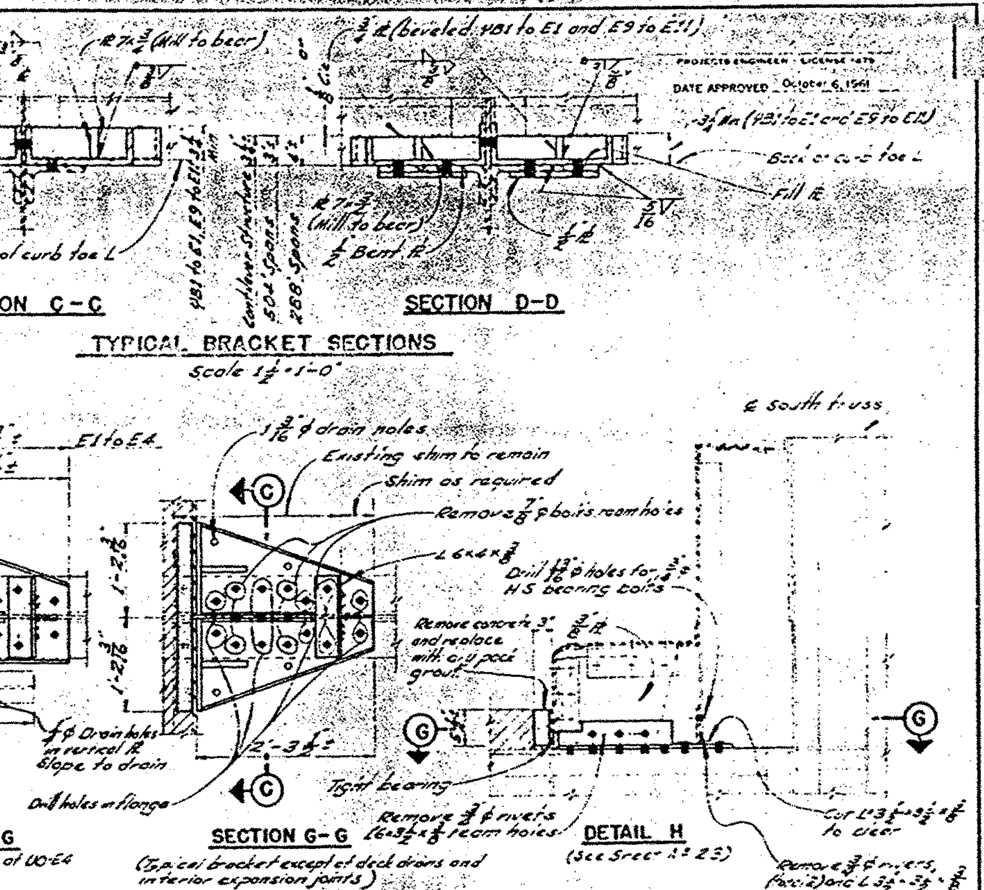
MARK	DATE	DESCRIPTION	BY	CHK
△	11.1.63	As built with revisions	AB	CEF

REVISION

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY
TYPE B COVER PLATES
SCALE 1" = 1'-0"

APPROVAL RECOMMENDED BY





ERECTION PROCEDURE OF SHEAR BRACKETS

The purpose of these brackets is to put the concrete deck into compression while the floor beam is subjected to bending and thereby to reduce compressive stresses in the floor beam flange. To achieve this it is necessary to install the brackets in such a way that they will become rigid, non-slipping, non-yielding connections between the floor beam flanges and the concrete slab.

1 The installation of the prestressed cover plate shall precede the bracket installation at each floor beam.
2 Sawcut and remove concrete, clean exposed concrete and steel surfaces as specified, fill tightly with dry pack grout.
3 Remove rivets and bolts as noted, plug unused holes by welding (carbon steel only) or with machine bolts.
4 Prepare steel contact surfaces as specified.
5 Place shear brackets, singly or in pairs, fasten loosely by bolting thru available holes.
6 After dry pack has reached full specified strength, press shear bracket tightly against curb toe angle with the help of wedges inserted between the tail end of the brackets and the truss post.
7 When full contact over the entire width of the bracket is obtained drill or ream holes in bracket and/or floor beam flange and install H.S bearing bolts.

NOTES

1 All field connections of brackets 1⅛" ϕ H.S. Bearing Bolts except as noted.
2 For shear brackets on girder span floor beams see Sheet Nº 35.
3 For arrangement of shear brackets at U35, YB1-E1 and U8, E10-E11, see Sheet 30.
4 Where curb remains in place, brackets are similar to those shown for E11 to E23.
5 For location of deck drains and interior expansion joints, see Sheets Nº 6 to 15.
6 Location and dimensions of shims to be determined in the field.
7 For as built record of shear brackets see shop drawings. Field cutting was required for an undeterminate number of shear brackets: this has not been recorded.

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

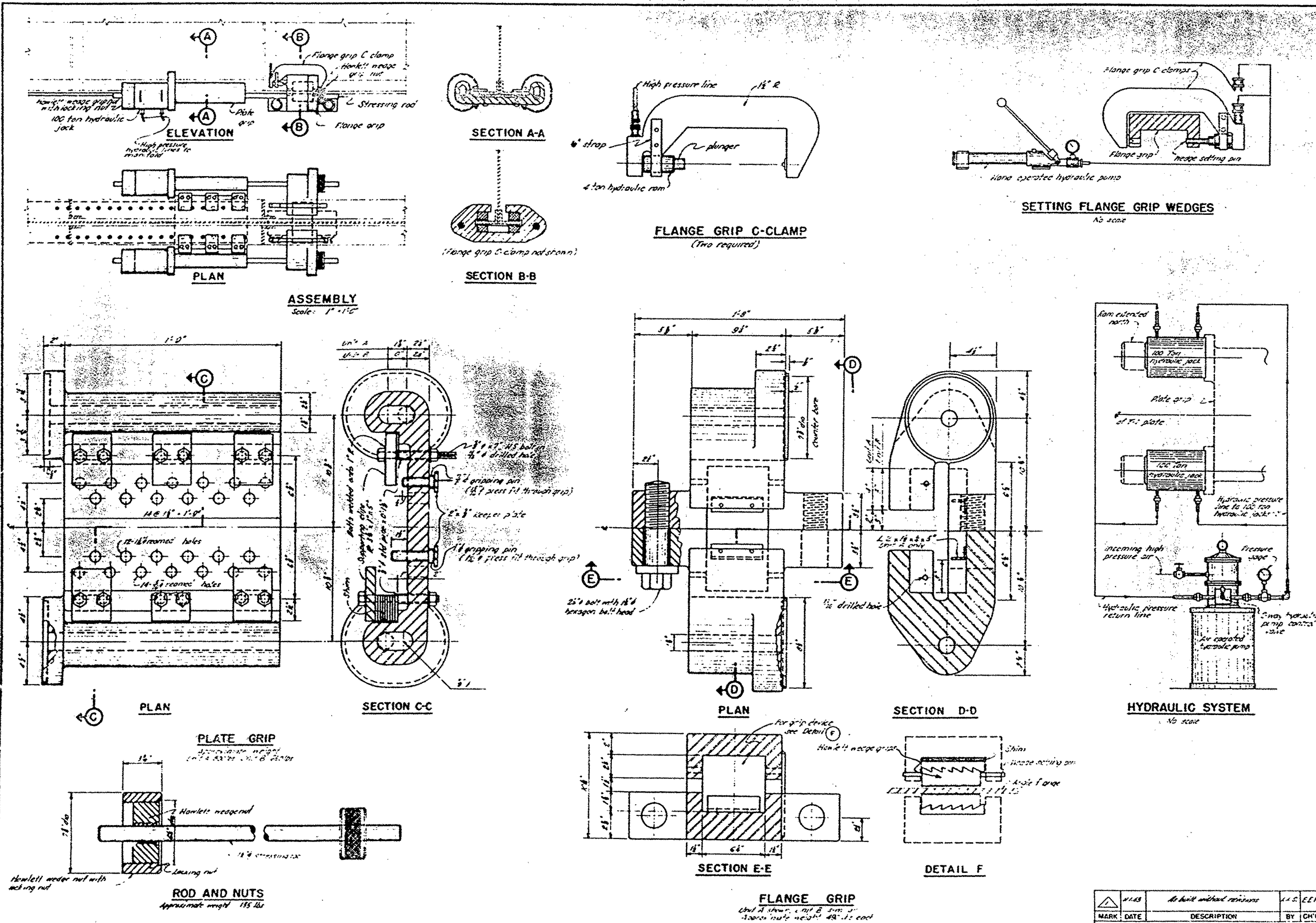
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

SHEAR BRACKETS

MARK	DATE	DESCRIPTION	BY	CHK
1	1-'63	As built with revisions	CB	EEF

REVISION

UNLESS NOTED SCALE 1" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 38 | DRAWING No 4230-38



DATE APPROVED October 6, 1961

LIST OF PARTS

Item	Number
Plate grip complete with accessories	[illegible]
Flange grip complete with accessories	[illegible]
Flange grip C-clamp, assembled	[illegible]
Hand operated hydraulic pump	[illegible]
100 ton hydraulic jack	[illegible]
Rod centering sleeve	[illegible]
Air operated hydraulic pump complete with pressure gage, ¼" hydraulic hose and fittings	[illegible]
Howlett wedge grip lock nut complete with spreader	[illegible]
Howlett wedge grip nut	[illegible]
Wedge grip spreader	[illegible]
[illegible] stress rod	[illegible]
[illegible] stress rod	[illegible]
[illegible] stress rod	[illegible]

These parts will be available at Division headquarters

ERECTION PROCEDURE OF STRESSING DEVICE

Clean grip area on flange angles.

Place flange grip castings on flange angles, bolt them together [illegible] Howlett wedge grip teeth into flange angles with the help of flange grip C-clamps. Place plate grip [illegible] plate with gripping pins engaged in first 14 plate holes for type A plates and first 12 plate holes for type B plates. Supporting [illegible] shall rest on flange angles. Place stressing rods, jacks and Howlett wedge grip nuts and locking nuts. Connect jacks with pump [illegible] manifold. Jacks may be placed either at the plate grip end or at the flange grip end of the stressing rod.

MARK	DATE	DESCRIPTION	BY	CH'K
1	11-63	As built without revisions	[illegible]	EEF
		REVISION		

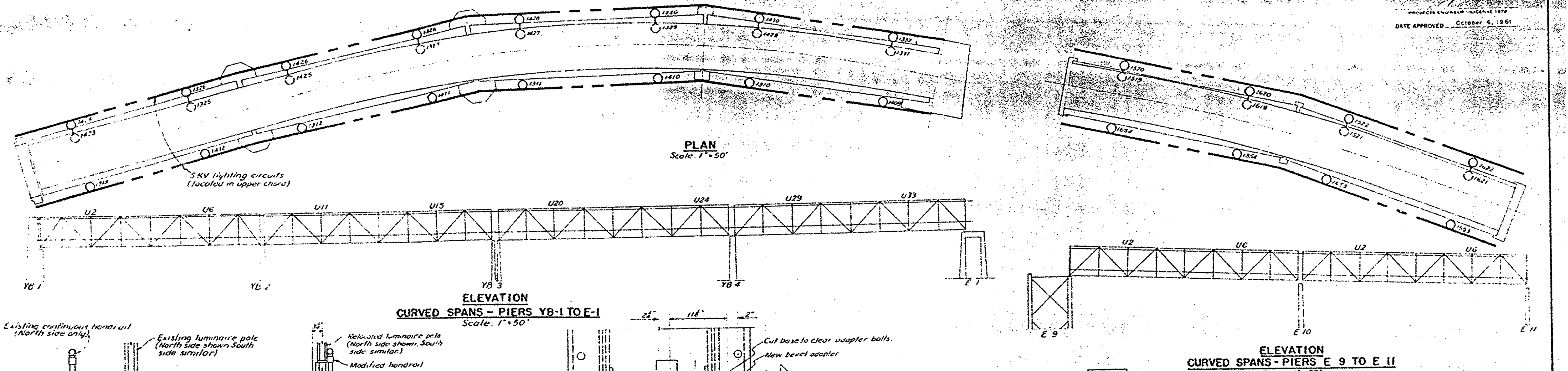
State of California
Department of Public Works
Division of San Francisco Bay Toll Crossings

SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
STEELWORK - EAST BAY

STRESSING DEVICES

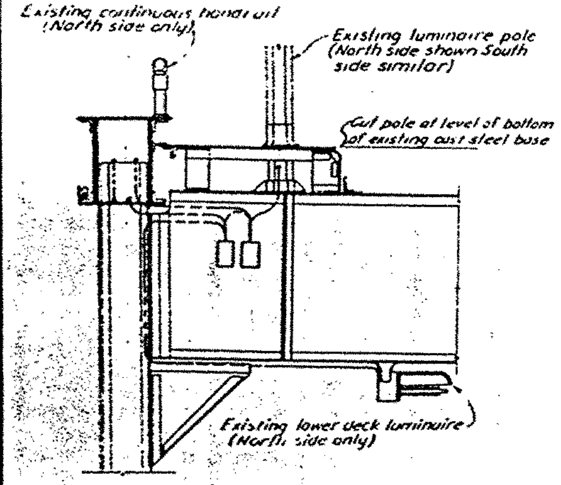
UNLESS NOTED SCALE 3" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 39

PROJECTS ENGINEER — LICENSE 1479
DATE APPROVED October 6, 1961

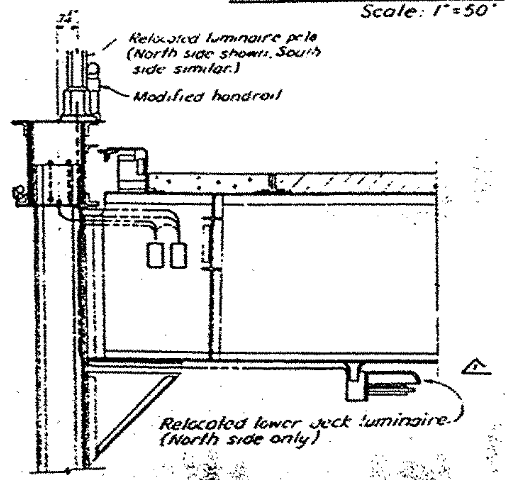


LEGEND

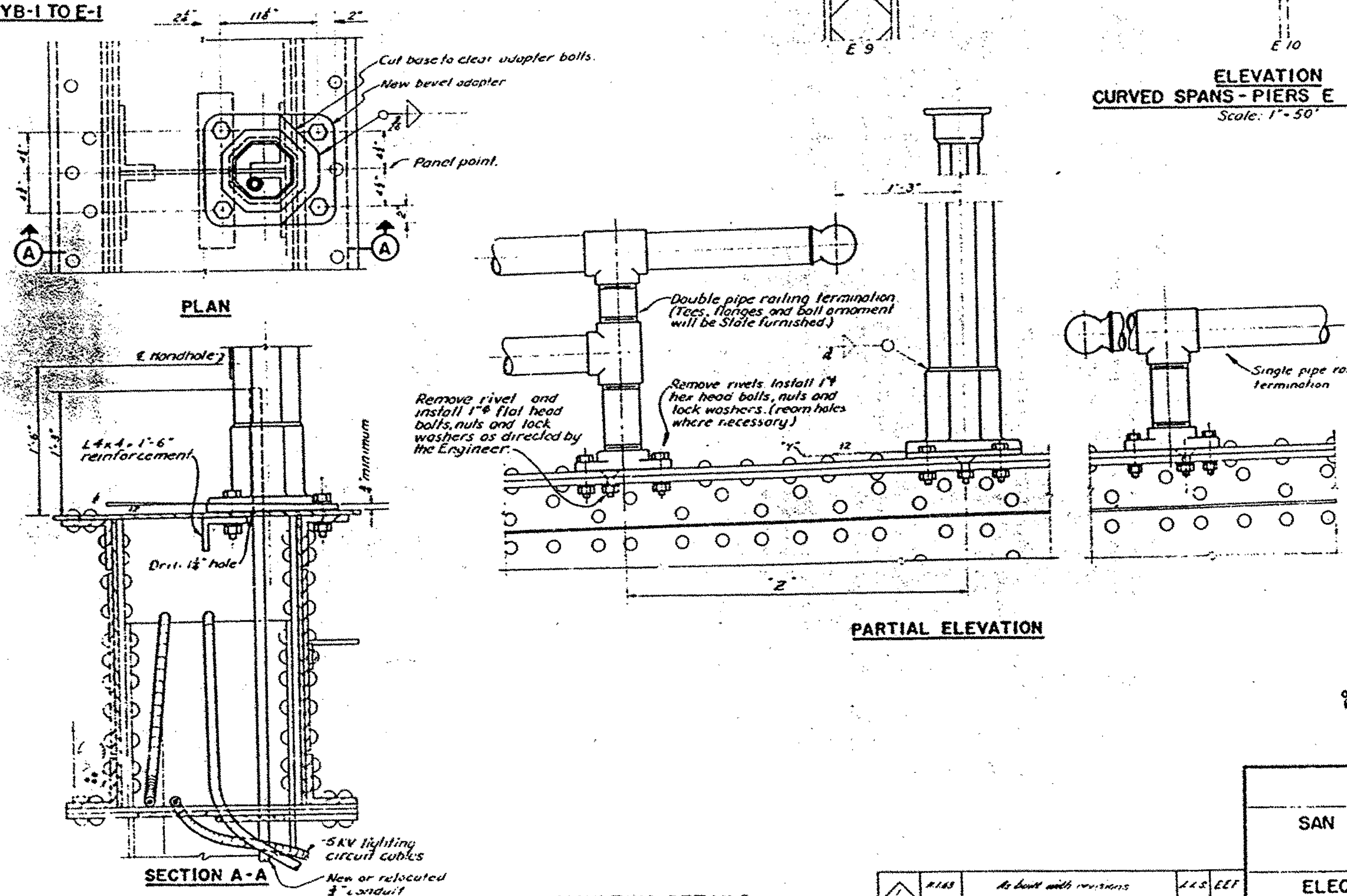
- ○ Upper deck pole mounted luminaire
- ○ Lower deck bracket mounted luminaire
- ——— 5kV lighting circuits.
- ——— Existing secondary lighting circuits.
- ——— Relocated and new secondary lighting circuits.



EXISTING LIGHTING INSTALLATION
Scale 3/4" = 1'-0"
(Panel point U 11 North shown, others similar)



RELOCATED LIGHTING INSTALLATION
Scale 3/4" = 1'-0"
(Panel point U 11 North shown, others similar)



POLE MOUNTING DETAILS
Scale: 1½" = 1'-0"

NOTES

1. Dimension "Z" shall be such that not more than two rivets need be removed. "Z" maximum equals 3'-6" and "Z" minimum equals 2'-6".
2. Dimension "Y" shall be as follows.
   Piers YB1 to YB3, ⅜". YB3 to YB4, ¼".
   YB4 to E1, ⅜". E9 to E11, ¼".
3. Final alignment of poles shall be vertical. Grinding of base and use of single ⅛" maximum steel shims will be permitted.
4. All screwed fastenings shall be installed with approved locking devices.
5. (△1) For as-built record of luminaire relocation see shop drawings.

SCALE IN INCHES (8 THS / 10 THS)

MARK	DATE	DESCRIPTION	BY	CH'K
△1	8-1-63	As built with revisions	L.L.S.	E.E.F.
		REVISION		

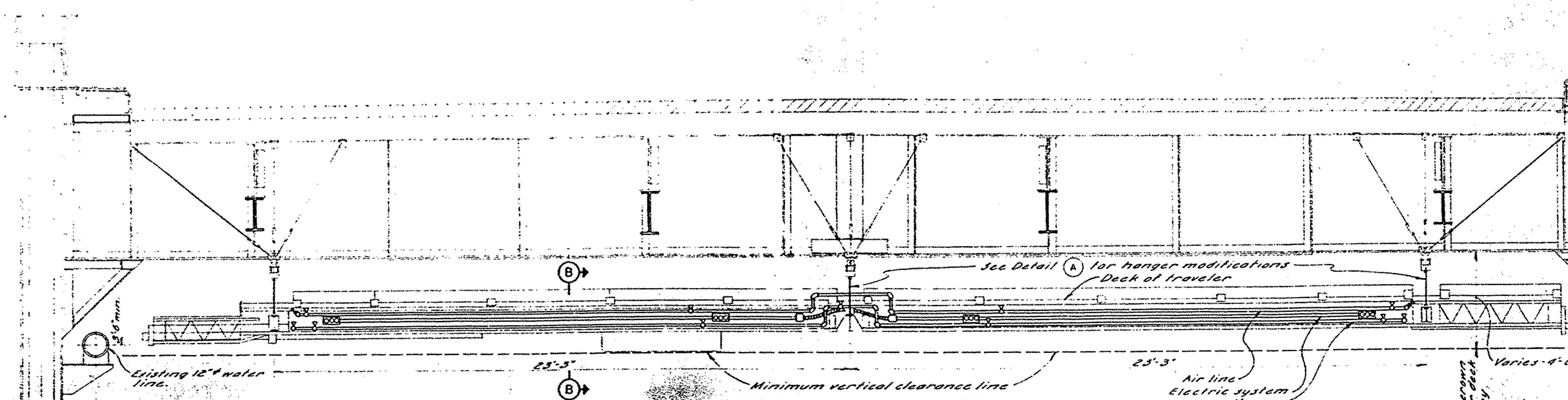
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

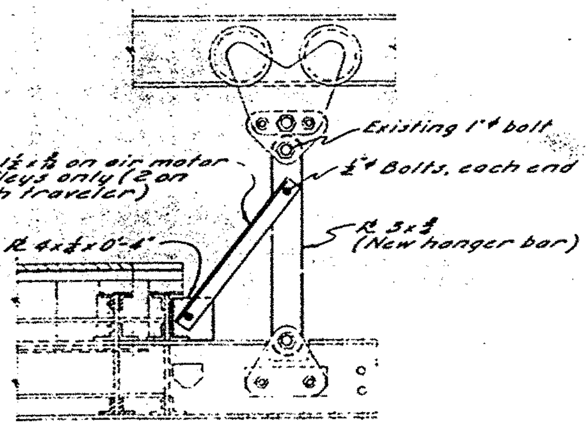
ELECTRICAL - LIGHTING RELOCATION

SCALE: AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 40 | DRAWING [illegible]

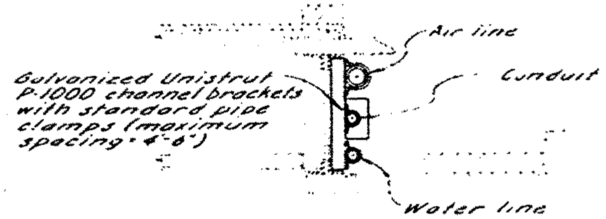
PROJECTS ENGINEER - LICENSE
DATE APPROVED October 6, 1961



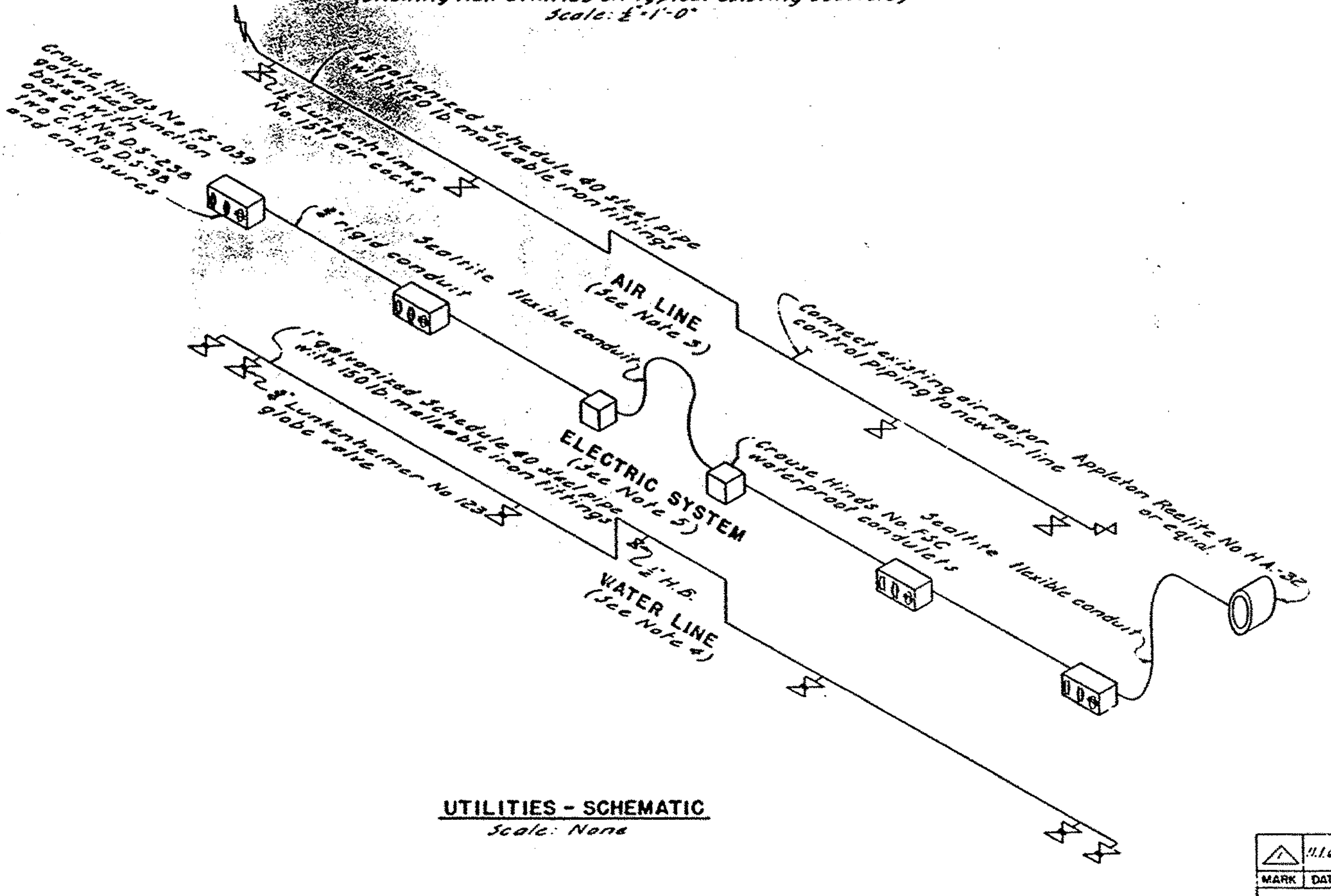
SECTION THRU SPANS E11 TO E23
(Showing new utilities on typical existing scaffold)
Scale: ¼" = 1'-0"



DETAIL A
HANGER MODIFICATION
(Existing hanger bars to be removed and retained on traveler for future use.)
Scale: 1½" = 1'-0"



SECTION B-B
Scale: 1½" = 1'-0"



UTILITIES - SCHEMATIC
Scale: None

NOTES

1. Furnish and install a 1" water line, 1½" air line and a 120/240 single phase electrical distribution system: including all wire, conduit and pipe; all fittings, clamps and supports; and all necessary devices for operation.
2. All rigid conduit and associated equipment shall be hot-dip galvanized.
3. Supply three 50' lengths of 1½" Acme Gold Seal hose with Chicago Pneumatic No. C-15076 and No. C-15145 universal couplings as required on the air system.
4. Supply three 50' lengths of Acme Buffalo (200 p.s.i.) hose with Chicago Pneumatic No. C-15120 and No. C-15130 universal couplings as required on the water system.
5. Supply and install 150' of 14-3SJ cord with Crouse-Hinds No. WP82B weatherproof plug on the electric system.

SCALE IN INCHES

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.1.63	As built without revisions	CB	EEF
		REVISION		

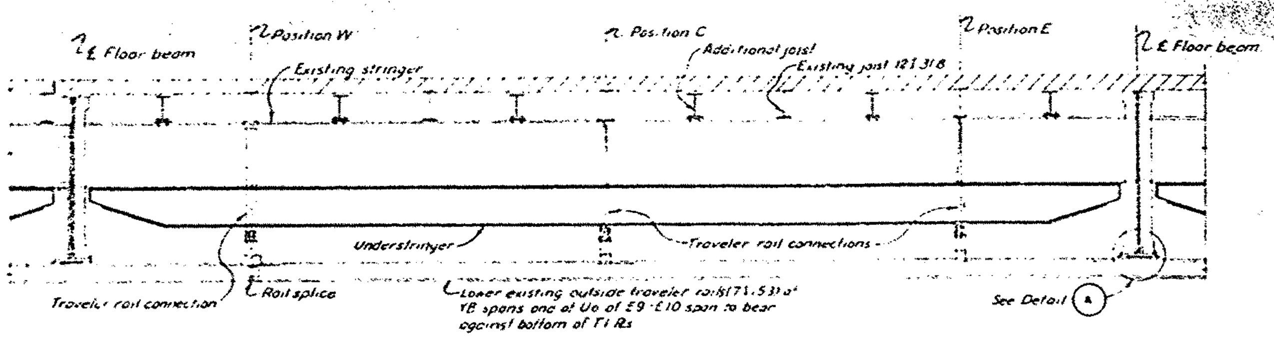
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

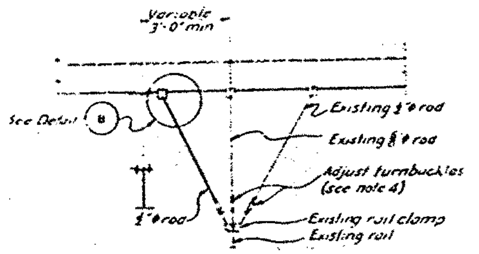
TRAVELER SCAFFOLD MODIFICATIONS

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 41 | DRAWING C-4030-4-9

LOCATION OF TRAVELER RAIL CONNECTIONS
OUTSIDE RAIL ELEVATION

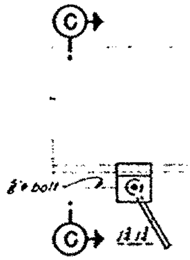


Scale 1/8" = 1'-0"



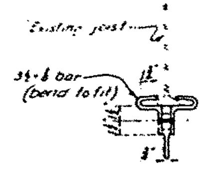
OUTSIDE RAIL CROSS SECTION

Scale 1/8" = 1'-0"



DETAIL B

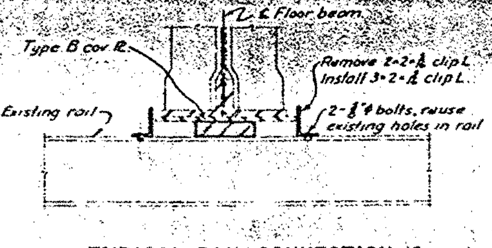
Scale 1½" = 1'-0"



SECTION C-C

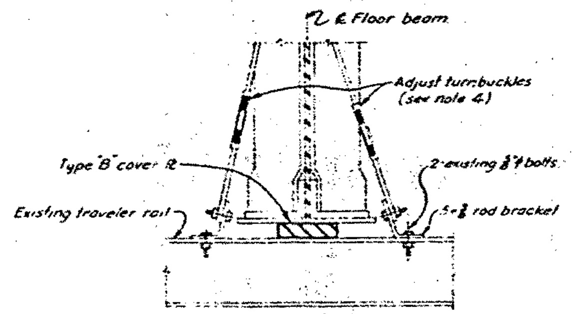
Scale: 1½" = 1'-0"

CONNECTION TYPE I



TYPICAL RAIL CONNECTION (Expansion Stop)

All interior floor beams under Type B cover Plate

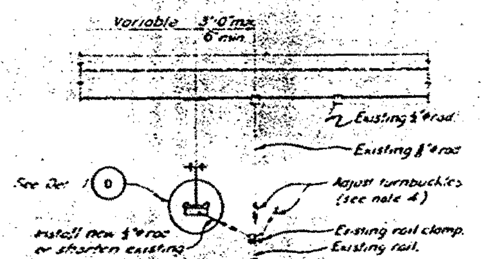


RAIL CONNECTION

For end floor beams of YB Spans

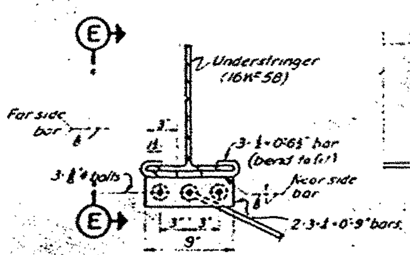
DETAIL A

Scale: 1½" = 1'-0"



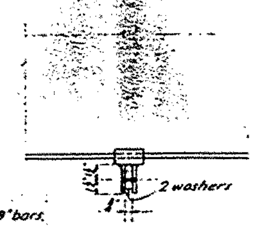
OUTSIDE RAIL CROSS SECTION

Scale 1/8" = 1'-0"



DETAIL D

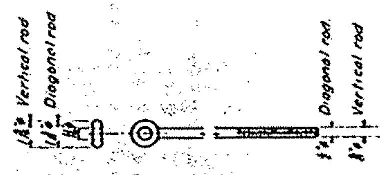
Scale 1½" = 1'-0"



SECTION E-E

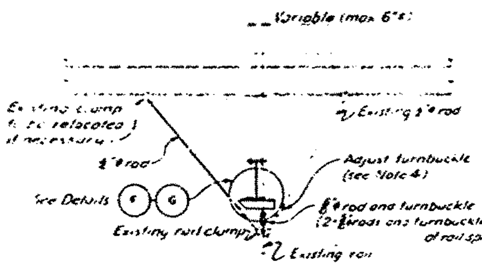
Scale 1½" = 1'-0"

CONNECTION TYPE II



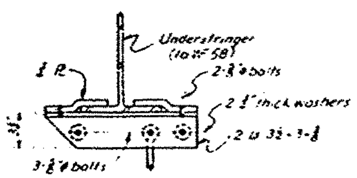
ROD DETAIL

Scale 3" = 1'-0"



OUTSIDE RAIL CROSS SECTION

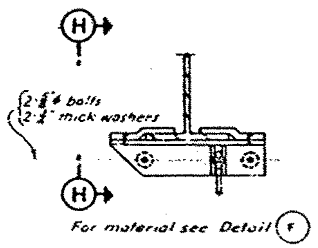
Scale 1/8" = 1'-0"



DETAIL F

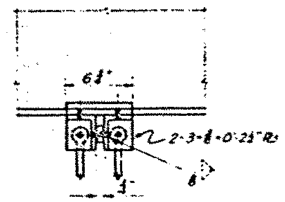
For one vertical rod
Scale 1½" = 1'-0"

CONNECTION TYPE III



DETAIL G

At rail splice
Scale 1½" = 1'-3"



SECTION H-H

Scale 1½" = 1'-0"

CONNECTION TYPES I, II AND III AT VARIOUS LOCATIONS

SPAN	PANEL	RAIL	POSITION IN PANEL W.	C	E	AW.	AE
YB1-YB2	U0-U1	N (North)	I	I	I		
		S (South)	II	II	II		
	U1-U2	N	II	II	II		
		S	II	II	II		
	U2-U3	N	II	II	II		
		S	II	II	II		
	U3-U4	N	II	II	II		
		S	III(S)	III	III		
	U4-U5	N	II	II	II		
		S	III(S)	III	III		
	U5-U6	N	II	II	II		
		S	II	II	II		
	U6-U7	N	III(S)	III	III		
		S	II	II	II		
	U7-U8	N	III(S)	III	III		
		S	II	II	II		
YB2-YB3	U9-U10	N	III	III	II	II	
		S	II	II	III		
	U10-U11	N	II	II	II		
		S	II	II	II		
	U11-U12	N	ETR	ETR	ETR		
		S	II	II	II		
	U12-U13	N	ETR	ETR	ETR		
		S	II	II	II		
	U13-U14	N	ETR	ETR	ETR		
		S	II	II	II		
	U14-U15	N	ETR	ETR	ETR		
		S	II	II	II		
	U15-U16	N	II	II	II		
		S	II	II	II		
	U16-U17	N	III(S)	II	II		II
		S	II	II	II		ETR
YB3-YB4	U18-U19	N	II	II	III	II	
		S	ETR	II	II		
	U19-U20	N	II	II	II		
		S	III(S)	III	III		
	U20-U21	N	ETR	ETR	ETR		
		S	II	II	II		
	U21-U22	N	ETR	ETR	ETR		
		S	II	II	II		
	U22-U23	N	ETR	ETR	ETR		
		S	II	II	II		
	U23-U24	N	ETR	ETR	ETR		
		S	II	II	II		
	U24-U25	N	II	II	II		
		S	III(S)	III	III		
	U25-U26	N	III(S)	II	II		II
		S	II	II	ETR		
YB4-E1	U27-U28	N	II	II	III	II	
		S	ETR	II	II		
	U28-U29	N	II	II	II		
		S	III(S)	III	III		
	U29-U30	N	I	I	I		
		S	II	II	II		
	U30-U31	N	ETR	ETR	ETR		
		S	II	II	II		
	U31-U32	N	ETR	ETR	ETR		
		S	II	II	II		
	U32-U33	N	I	[illegible]	I		
		S	II	II	II		
	U33-U34	N	II	II	II		
		S	III(S)	III	III		
	U34-U35	N	II	II	II		
		S	II	II	II		

SPAN	PANEL	RAIL	POSITION IN PANEL W.	C	E	AW	AE
E9-E10	U0-U1	N (North)	II	II	II		
		S (South)	II	III	III		
	U1-U2	N	II	II	II		
		S	III(S)	III	III		
	U2-U3	N	II	II	II		
		S	II	II	II		
	U3-U4	N	ETR	ETR	ETR		
		S	II	II	II		
	U4-U5	N	ETR	ETR	ETR		
		S	II	II	II		
	U5-U6	N	II	II	II		
		S	II	II	II		
	U6-U7	N	II	II	II		
		S	III(S)	III	III		
	U7-U8	N	III(S)	III	II		II
		S	II	II	II		
E10-E11	U0-U1	N	II	III	III	II	
		S	II	II	II		
	U1-U2	N	II	II	II		
		S	III(S)	III	III		
	U2-U3	N	II	II	II		
		S	II	II	II		
	U3-U4	N	ETR	ETR	ETR		
		S	II	II	II		
	U4-U5	N	ETR	ETR	ETR		
		S	II	II	II		
	U5-U6	N	II	II	II		
		S	II	II	II		
	U6-U7	N	II	II	II		
		S	III(S)	III	III		
	U7-U8	N	II	II	II		
		S	III(S)	III	II		

A.W. - Indicates : Additional position in panel west of W
A.E. - Indicates : Additional position east of E
ETR - Indicates : Existing connection to remain.
(S) - Indicates : Location of rail splice

NOTES

1. For typical center rail adjustment between floor beams, see Sect. (E/43)
2. For adjustment of center rail under floor beam U8, span E9-E10 and U0 and U8, span E10-E11, see Detail (B/43)
3. For adjustment of rails under floor beam at U0, span E9-E10, see Detail (C/43)
4. Adjustment of turnbuckles is permitted if the hanger rods engage the full length of the turnbuckle threads. Where adjustment of turnbuckles is not feasible, rail shall be lowered by substituting rods of adequate length or by shimming rod brackets. (See Rail Connection Detail A)
5. Lock washers shall be furnished under the nuts of all machine bolts used in the new work

SCALE IN INCHES

PROJECTS ENGINEER—LICENSE 1430
DATE APPROVED October 6, 1961

APPROVAL RECOMMENDED BY

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.1.63	As built without revisions	ds	EEF

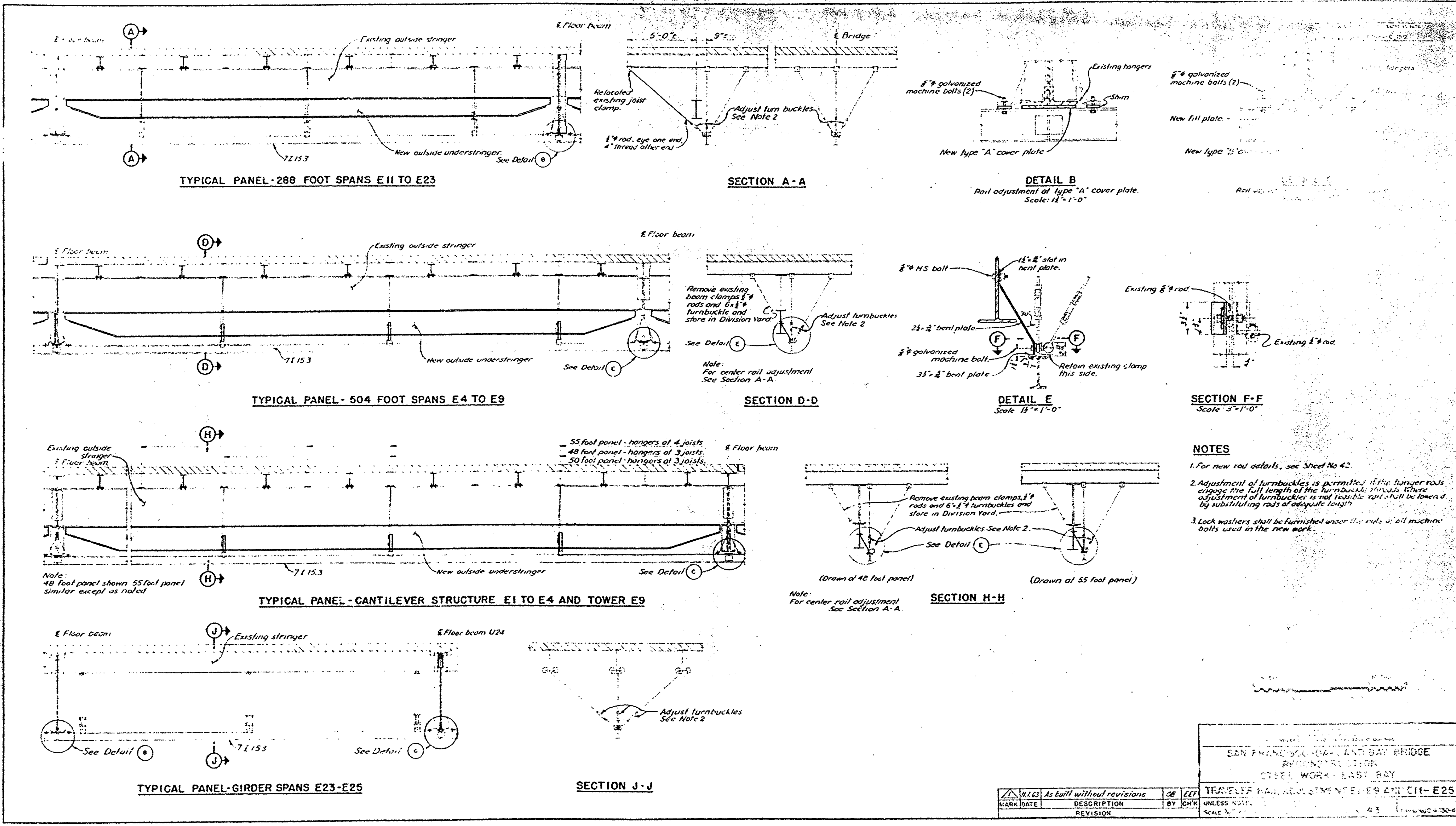
REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY

TRAVELER RAIL ADJUSTMENT YB1-E1 AND E9-E11

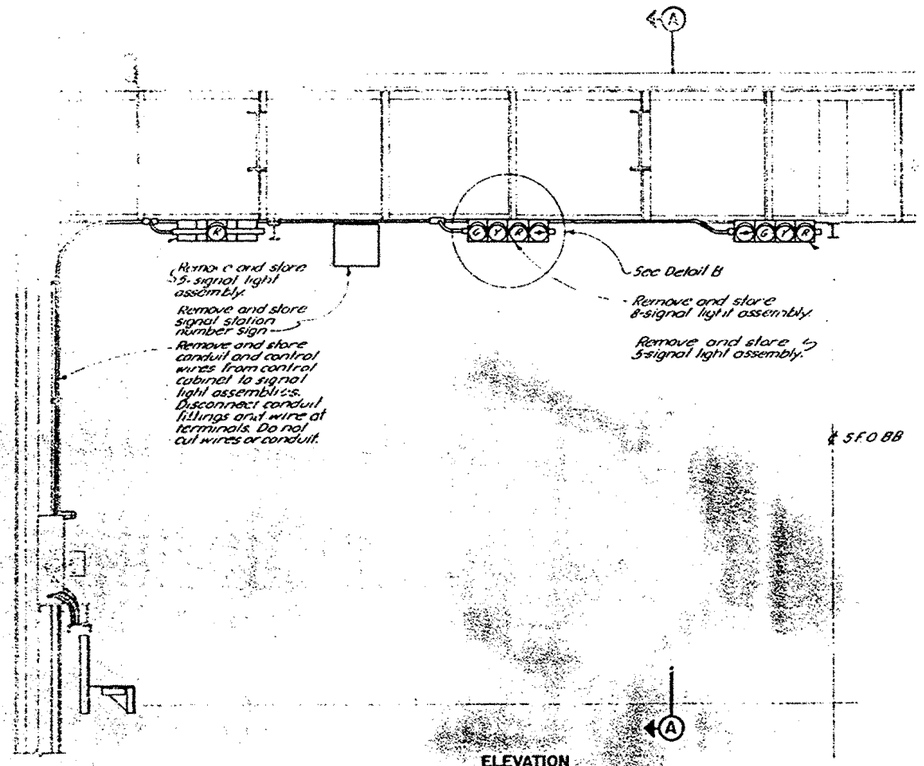
SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No 42 | DRAWING 34-30-42R



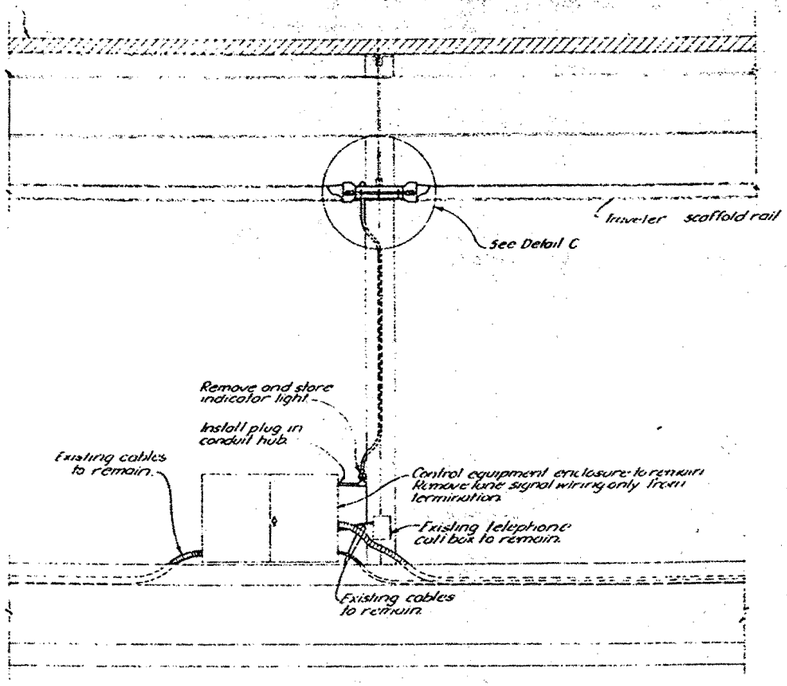
Existing outside stringer
℄ Floor beam
New outside understringer
7I15.3
See Detail B
TYPICAL PANEL-288 FOOT SPANS E11 TO E23
5'-0"±
9"±
℄ Bridge
Relocated existing joist clamp.
Adjust turn buckles See Note 2
¾"φ rod, eye one end, 4" thread other end
SECTION A-A
Existing hangers
⅝"φ galvanized machine bolts (2)
Shim
New type "A" cover plate
DETAIL B
Rail adjustment at type "A" cover plate.
Scale: 1½" = 1'-0"
New fill plate
New type "B" c
Rail adj
Existing outside stringer
℄ Floor beam
New outside understringer
7I15.3
See Detail C
TYPICAL PANEL - 504 FOOT SPANS E4 TO E9
Remove existing beam clamps ¾"φ rods and 6x¾"φ turnbuckle and store in Division Yard.
Adjust turnbuckles See Note 2
See Detail E
Note: For center rail adjustment See Section A-A
SECTION D-D
⅝"φ HS bolt
1½"x¾" slot in bent plate.
2½x⅜" bent plate
⅝"φ galvanized machine bolt.
3½"x⅜" bent plate
Retain existing clamp this side.
30°
DETAIL E
Scale 1½" = 1'-0"
Existing ⅞"φ rod
Existing ¾"φ rod
SECTION F-F
Scale 3" = 1'-0"
Existing outside stringer
℄ Floor beam
55 foot panel - hangers at 4 joists
48 foot panel - hangers at 3 joists.
50 foot panel - hangers at 3 joists.
New outside understringer
7I15.3
See Detail C
Note: 48 foot panel shown 55 foot panel similar except as noted
TYPICAL PANEL - CANTILEVER STRUCTURE E1 TO E4 AND TOWER E9
Remove existing beam clamps, ¾"φ rods and 6"x¾"φ turnbuckles and store in Division Yard.
Adjust turnbuckles See Note 2.
See Detail E
(Drawn at 48 foot panel)
(Drawn at 55 foot panel)
Note: For center rail adjustment See Section A-A.
SECTION H-H
℄ Floor beam
Existing stringer
℄ Floor beam U24
See Detail B
7I15.3
See Detail C
TYPICAL PANEL-GIRDER SPANS E23-E25
Adjust turnbuckles See Note 2
SECTION J-J
NOTES
1. For new rod details, see Sheet No 42.
2. Adjustment of turnbuckles is permitted if the hanger rods engage the full length of the turnbuckle threads. Where adjustment of turnbuckles is not feasible rail shall be lowered by substituting rods of adequate length
3. Lock washers shall be furnished under the nuts of all machine bolts used in the new work.
APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER
1 | 11.1.63 | As built without revisions | CB | EEF
MARK | DATE | DESCRIPTION | BY | CH'K
REVISION
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK - EAST BAY
TRAVELER RAIL ADJUSTMENT E1-E9 AND E11-E25
UNLESS NOTED
SCALE
43

DATE APPROVED October 6, 1961

SIGNAL LOCATIONS	
Signal Number	SFOBB Station No.
23	170+95
24	175+21
25	178+12
26	181+04
27	184+62
28	190+94
29	196+70
30	202+40
31	208+12
32	214+07
33	220+42
34	225+93
35	234+43
36	237+81
37	242+91
38	248+73
39	254+55
40	260+39
41	266+23
42	272+07
43	278+20



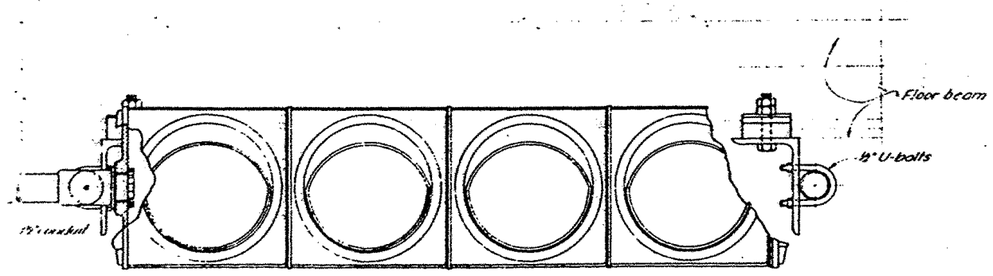
ELEVATION



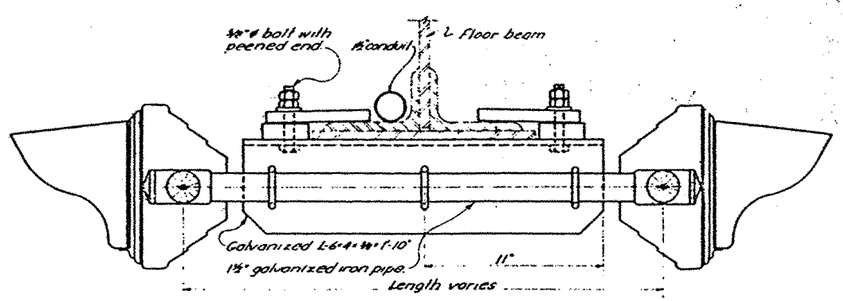
SECTION A-A

TYPICAL LANE SIGNAL INSTALLATION

Scale: 1/8"-1'-0"



DETAIL B
Scale 3"-1'-0"



DETAIL C
Scale 3"-1'-0"

0 1 2 3 4 5 6 7 8 9 10 FEET
SCALE 1/2 INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

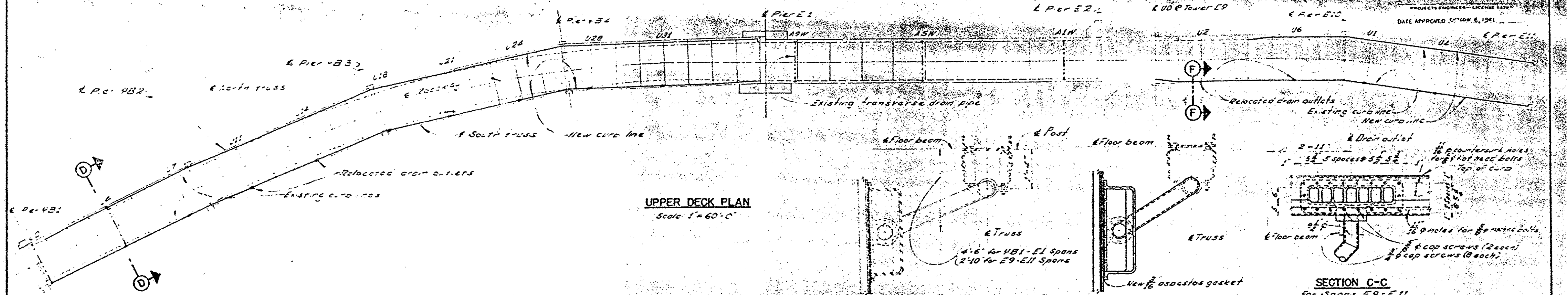
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
STEEL WORK-EAST BAY

LANE SIGNAL SYSTEM REMOVAL

MARK	DATE	DESCRIPTION REVISION	BY	CH'K
1	11.1.63	As built without revisions	JB	EEF

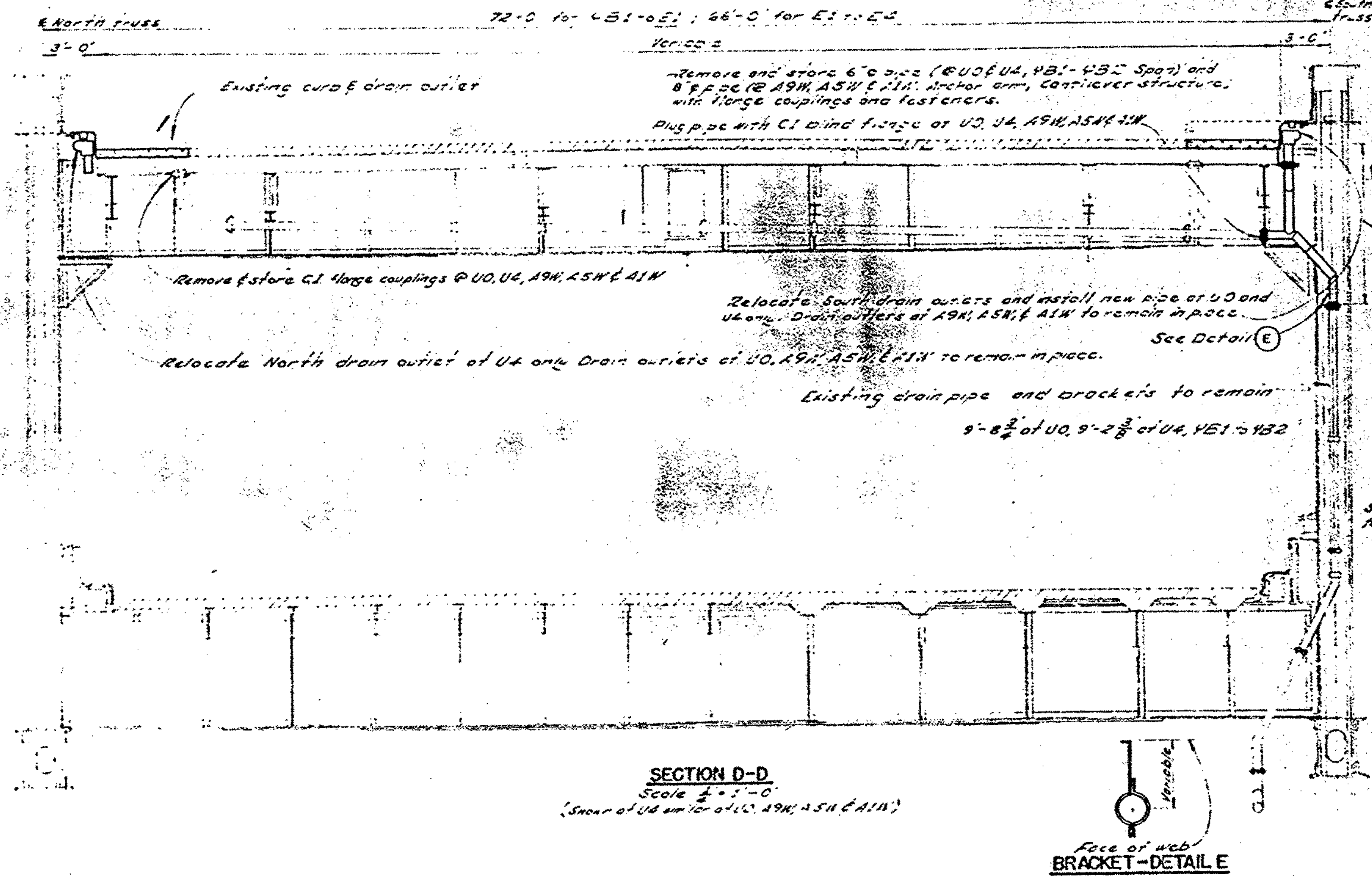
SCALE AS SHOWN | BRIDGE 33-23, 34-03, 34-04 | SHEET NO. 44

APPROVAL RECOMMENDED BY



UPPER DECK PLAN

Scale: 1" = 60'-0"

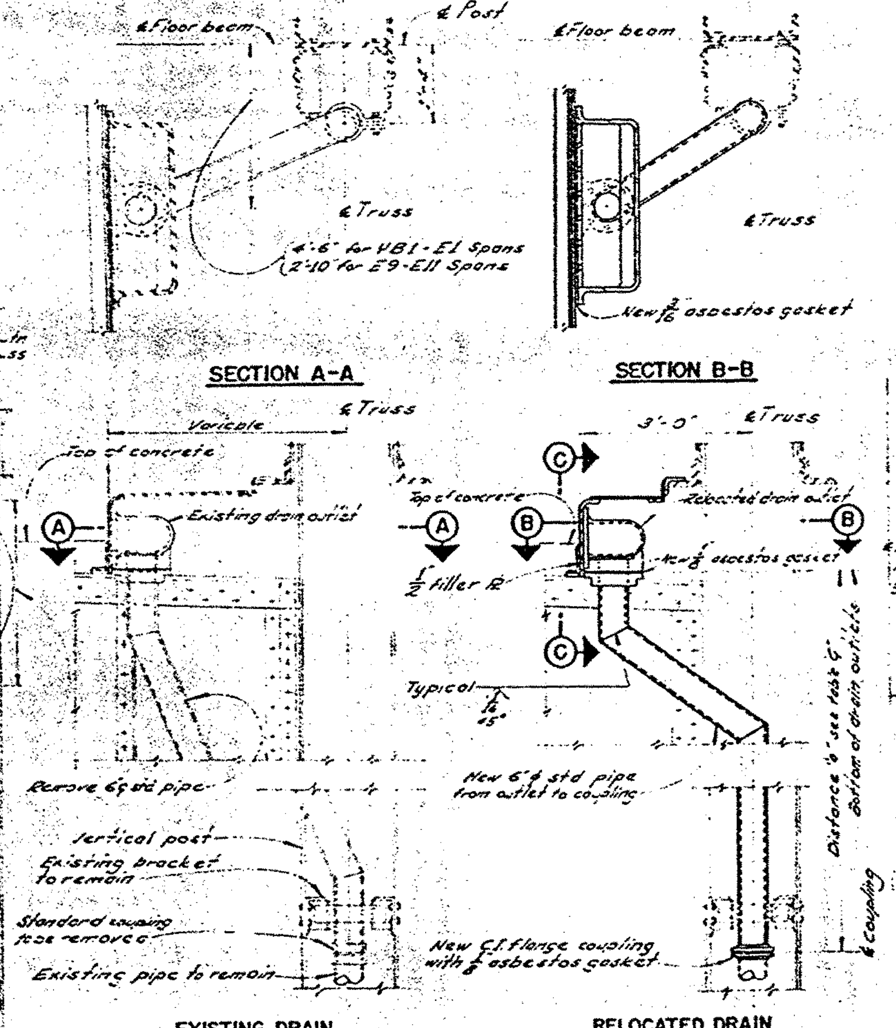


SECTION D-D

Scale ¼" = 1'-0"

(Shown at U4 similar at U0, A9W, A5W & A1W)

BRACKET-DETAIL E



SECTION A-A

SECTION B-B

EXISTING DRAIN

RELOCATED DRAIN

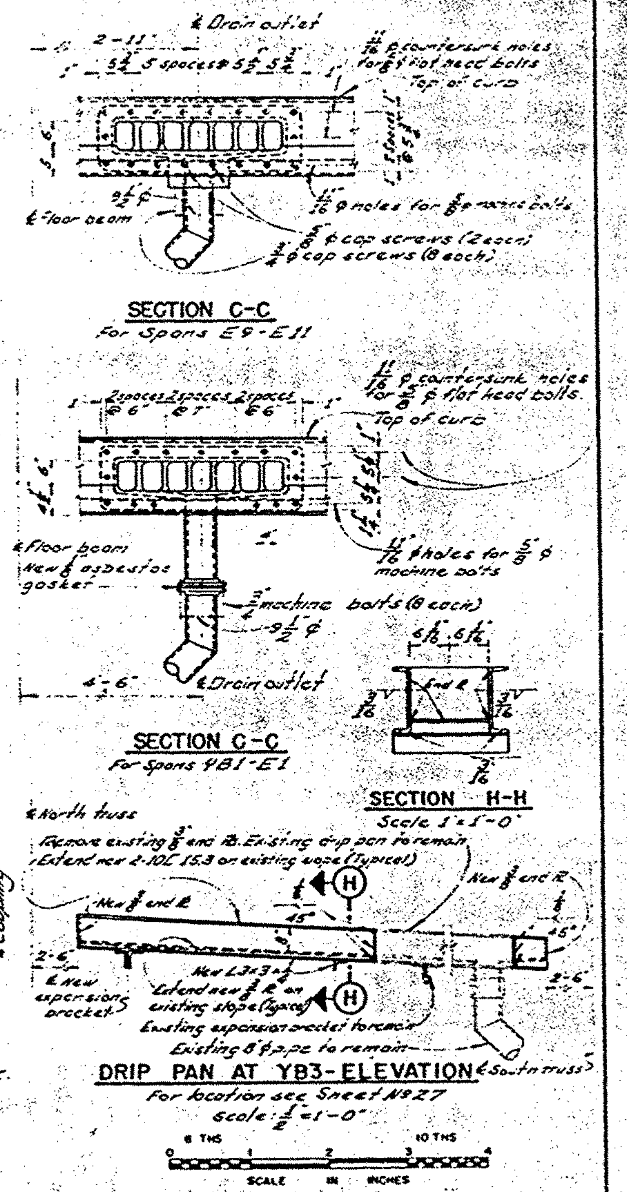
SINGLE DRAIN UNIT SOUTH – SECTION F-F

Note: Details for E9-E11 Spans shown. For YB1-E1 Spans see section C-C.
Scale: ¾" = 1'-0"

Span	YB1-YB2	YB2-YB3		YB3-YB4			YB4-E1		E9-E10		E10-E11	
Panel Point	U7	U11	U14	U18	U21	U24	U28	U31	U2	U6	U1	U4
"a"	9'-1⅛	6'-4⅛	6'-4⅛	6'-0½	6'-4½	6'-4½	6'-3⅝	6'-4⅝	10'-8⅝	10'-4⅝	9'-1⅞	10'-5½

Note: Add to distance "a" length required for pipe bend and pipe connections.

TABLE G



SECTION C-C

For Spans E9-E11

SECTION C-C

For Spans YB1-E1

SECTION H-H

Scale 1" = 1'-0"

DRIP PAN AT YB3 - ELEVATION

For location see Sheet No. 27
Scale: ½" = 1'-0"

PROJECTS ENGINEER — LICENSE

DATE APPROVED October 6, 1961

APPROVAL RECOMMENDED BY

SUPERVISING BRIDGE ENGINEER

DESIGN / DETAILS / QUANTITIES / CHECKED / DESIGN AND DETAILS REVIEWED BY

Mark	Date	Description	By	Ch'k
1	11.1.63	As built without revisions	OB	EEF

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK - EAST BAY

DRAIN PIPE RELOCATION

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET No 45 | DRAWING C-4030-45R